

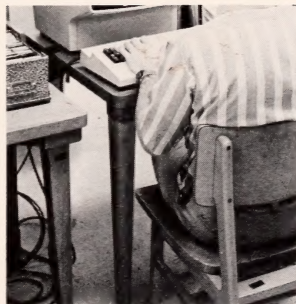
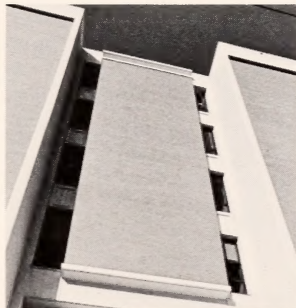


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The University of Georgia Bulletin 1984-85

GRADUATE SCHOOL

A Unit of the University System of Georgia



ABOUT THE COVER:

The University of Georgia, the nation's oldest state-chartered university, will be celebrating its bicentennial in 1985. A 16-month calendar of events begins at Commencement, 1984, and concludes in October, 1985.

The photographs on the cover echo the triple focus of the Bicentennial Celebration: The University's history, its present status, and its future.

The Boyd Graduate Research Center, (upper right), is the home of the University's Graduate School offices and also houses one of the nation's largest computer operations on a university campus. The Science Library, (lower right), located next to the Graduate Studies Building, contains materials in the life and physical sciences, agriculture, medicine, and technology, as well as computer terminals for faculty and student research.

Telamon Cuyler's photograph, (bottom left), taken in 1893, shows the 50' x 60' room on the second floor of the library building (completed in 1862, and now the north end of the Academic Building). The library then had fewer than 30,000 volumes, often stored in departmental archives. Today's library system, including the Main, Science, and Law Libraries, as well as other collections on and off-campus, contains more than 2 million volumes and affords one of the largest academic resources for research and instructional support in the Southeast.

When The University of Georgia Graduate School was organized and established in 1910, Dr. Willis H. Bocock, (center), served as its first dean. The Graduate School now coordinates the graduate programs of all the University's schools and colleges.

Faculty members, such as Professor of Biochemistry Dr. Leon Dure, (center), conduct research in a variety of disciplines, fulfilling the University's mission to seek new knowledge. Graduate students, such as those in the School of Journalism and Mass Communication, (upper left), also are involved in research projects in addition to class participation.

The University of Georgia Bulletin

1984-85

Graduate School



A Unit of the University System of Georgia

The University of Georgia is committed to the principle of affirmative action and shall not discriminate against otherwise qualified persons on the basis of race, color, religion, national origin, sex, age, physical or mental handicap, disability, or veteran's status in its recruitment, admissions, employment, facility and program accessibility, or services.

While every effort is made to provide accurate and current information, the University reserves the right to change, without notice, statements in the Bulletin concerning rules, policies, fees, curricula, courses, calendar, or other matters. Students enrolled at the University agree to comply with the University's rules and regulations and to accommodate to any changes necessary.

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ACADEMIC CALENDAR

1984-1985

SUMMER QUARTER

1984

Residence Halls Open
Orientation
Late Registration (Grad. Students)
Late Registration (All Students)
Classes Begin
Drop/Add
Holiday (No Classes)

Short Session

Note: Classes meet for 120 minutes daily

Midpoint of Session
Last Day of Classes
Final Exams

Regular (Thru) Session

Note: Classes meet for 60 minutes daily

Midpoint of Session
Classes End
Final Exams

June 12, Tu
June 13, W
June 13, W (1:00-6:00 p.m.)
June 14, Th
June 15, F
June 15, 18-19, F, M, Tu
July 4, W

June 29, F
July 16, M
July 17-18, Tu-W

July 16, M
Aug. 14, Tu
Aug. 15-17, W-F

FALL QUARTER

1984

Residence Halls Open
Orientation
Late Registration (Grad. Students)
Late Registration (All Students)
Classes Begin
Drop/Add
Midpoint of Quarter
Thanksgiving Recess
Classes Resume
Last Day of Classes
Final Exams

Sept. 16, Su
Sept. 17, M
Sept. 17, M (1:00-6:00 p.m.)
Sept. 18-19, Tu-W
Sept. 20, Th
Sept. 20, 21, 24, Th, F, M
Oct. 24, W
Nov. 21-25, W-Su
Nov. 26, M
Dec. 3, M
Dec. 4-7, Tu-F

WINTER QUARTER

1985

Residence Halls Open
Orientation
Late Registration (Grad. Students)
Late Registration (All Students)
Classes Begin
Drop/Add
Midpoint of Quarter
Last Day of Classes
Final Exams

Jan. 2, W
Jan. 3, Th
Jan. 3, Th (1:00-6:00 p.m.)
Jan. 4, F
Jan. 7, M
Jan. 7-9, M, Tu, W
Feb. 8, F
Mar. 14, Th
Mar. 15, 18-20,
F, M, Tu, W

SPRING QUARTER

1985

Residence Halls Open	Mar. 24, Su
Orientation	Mar. 25, M
Late Registration (Grad. Students)	Mar. 25, M (1:00-6:00 p.m.)
Late Registration (All Students)	Mar. 26, Tu
Classes Begin	Mar. 27, W
Drop/Add	Mar. 27-29, W-F
Midpoint of Quarter	Apr. 30, Tu
Last Day of Classes	June 3, M
Final Exams	June 4-7, Tu-F
Commencement	June 8, Sa

SUMMER QUARTER

1985

Residence Halls Open	June 12, W
Orientation	June 13, Th
Late Registration (Grad. Students)	June 13, Th (1:00-6:00 p.m.)
Late Registration (All Students)	June 14, F
Classes Begin	June 17, M
Drop/Add	June 17-19, M-W
Holiday	July 4, Th

Short Session

Note: Classes meet for *120 minutes daily*

Midpoint of Session

Last Day of Classes

Final Exams

July 1, M

July 16, Tu

July 17-18, W-Th

Regular (Thru) Session

Note: Classes meet for *60 minutes daily*

Midpoint of Session

Last Day of Classes

Final Exams

July 16, Tu

Aug. 14, W

Aug. 15-17, Th-Sa

Note: This Calendar is correct as of the date of this publication. The Calendar may be subject to change during the next year. Please refer to the *Schedule of Classes* and/or other special announcements that may be forthcoming.

CAMPUS MAP KEY

Academic/0120, 7-A
 Aderhold Hall/1060, 3-K
 Administrative Data Processing Center/0110, 5-A
 Agricultural Extension/1043, 6-M
 Agronomy Farm/3050, 1-B
 Alpha Chi Omega Sorority/2218, 6-L
 Alpha Epsilon Pi Fraternity/2232, 3-I
 Alpha Psi/2255, 4-O
 Alpha Tau Omega Fraternity/2234, 3-H
 Alumni House/1661, 5-N
 Automotive Center/1634, 2-F
 Baldwin Hall/0050, 5-D
 Baptist Student Union/2603, 7-E
 Barrow Hall/1021, 4-I
 Baseball Field House/2616, 5-P
 Biological Sciences/1000, 4-H
 Bishop House/0032, 6-B
 Boggs Hall/2216, 7-J
 Bolton Hall/2210, 7-I
 Boyd Graduate Studies/1023, 4-J
 Brumby Hall/2213, 10-M
 Business Administration/0055, 6-D
 Business Services/0110, 6-A
 Business Services Annex/0121, 6-A
 Caldwell Hall/0046, 7-D
 Candler Hall/0031, 7-C
 Catholic Student Center/2613, 7-P
 Chapel/0022, 7-B
 Chemistry/1001, 5-H
 Child Development Laboratory/1652, 4-L
 Chi Phi Fraternity/2200, 8-C
 Chi Psi Fraternity/2202, 8-D
 Church Hall/2215, 7-J
 Clark Howell Hall/0290, 6-H
 Coliseum/1654, 5-M
 Conner Hall/1011, 4-H
 Creswell Hall/2211, 8-J
 Dairy Research Building/2840, 2-M
 Dairy Science/1050, 3-K
 Dawson Hall/1010, 5-J
 Dean William Tate Student Center/0672, 5-C
 Delta Chi Fraternity/2235, 3-C
 Delta Phi Epsilon Sorority/2219, 7-P
 Demosthenian Hall/0021, 7-A
 Driftmier Engineering Center/1090, 3-M
 Dudley Hall/1051, 3-J
 Ecology Building/1033, 3-J
 Environmental Design/0044, 7-D
 Environmental Laboratory, S.E./2698, 2-C
 Fain Hall/1053, 3-J
 Family Housing Office/2238, 2-P
 Family Housing, University Village 1, 2 & 3/2221, 2-N
 Family Housing, University Village 4/2240, 2-P
 Fine Arts/0060, 6-F
 Food Science/1020, 4-H
 Forest Resources/1044, 3-K
 Forestry Science Laboratory/1550, 2-L
 Forest Science Laboratory Annex/1511, 2-K
 Garden Club of Georgia/0650, 7-D
 General Research/2125, 2-F
 Geography, Geology, Speech/1002, 5-H
 Geology Hydrothermal Laboratory/0090, 5-H
 Georgia Center/1640, 5-L
 Georgia Museum of Art/0631, 6-B
 Georgia Retardation Center/2639, 3-E
 Gilbert Health Center/0640, 7-C
 Greenhouses, PAT, HOR, AGR/2410, 2-F
 Greenhouse Botany/2415, 2-F
 Greenhouse A-N. PHR, HOR/1340, 4-L
 Greenhouse 1-N. PHR, PAT/1350, 4-L
 Greenhouse 2-N. PHR, PAT/1351, 4-L
 Greenhouse 3-N. PHR, HOR/1352, 4-L
 Griggs Hall/1052, 3-J
 Hardman Hall/1031, 4-J
 Hercules Laboratory/1632, 2-J
 Hill Hall/2214, 6-I
 Hodgson House/2609, 6-J
 Hoke Smith Annex/1042, 5-M
 Home Management Houses/1246, 4-L
 Industrial Arts/1082, 3-L
 Intramural Field/2607, 2-N
 Joe Brown Hall/0250, 7-E
 Journalism/0062, 5-E
 Journalism Auditorium, North/0065, 5-E
 Kappa Alpha Fraternity/2201, 8-C
 Kappa Sigma Fraternity/2233, 3-M
 Law Library Annex/0043, 7-D
 Law School/0043, 6-C
 Learning Service Center/2612, 5-N
 LeConte Hall/0053, 5-D

Legion Pool/2605, 7-I
 Library, Main/0054, 6-D
 Library, Science/1621, 7-H
 Lipscomb Hall/2208, 7-H
 Livestock-Poultry/1013, 4-H
 Lumpkin St., 1088S./2119, Aux. & Administrative Services Offices, 6-L
 Lumpkin St., 1238 S./2030, Home Economics Offices, 6-M
 Lumpkin St., 1242½ S./2627, Offices for Retired Faculty, Law School, 7-N
 Lumpkin St., 1240 S./2628, University Employees Federal Credit Union, 6-M
 Lumpkin St., 1238½ S./2629, Georgia Center Storage, 6-M
 Lumpkin St., 1242 S./2631, Art Department Studios, 6-N
 Lumpkin St., 1260 S./2635, Inst. of Govt. Training Division Offices, 6-O
 Lumpkin St., 1280 S./2636, Georgia Center Offices, 6-O
 Lumpkin House/1012, 4-H
 Lustrat House/0632, 6-B
 Lutheran Student Center/2610, 6-K
 Mary Lyndon Hall/1221, 5-K
 McWhorter Hall/1280, 3-N
 Meigs Hall/0024, 8-B
 Mell Hall/2209, 7-I
 Memorial Hall/0670, 5-F
 Military, Army ROTC/0061, 6-E
 Milledge Hall/0271, 4-E
 Moore College/0025, 8-B
 Morris Hall/2204, 7-E
 Myers Hall/1222, 5-K
 New College/0030, 7-B
 Oglethorpe House/2217, 6-K
 Old College/0130, 6-C
 Park Hall/0056, 6-E
 Payne Hall/0270, 4-E
 Peabody Hall/0042, 6-C
 People's Park/6-N
 Personnel Services/0620, 6-B
 Pharmacy/1041, 4-K
 Phi Delta Theta Fraternity/2206, 7-G
 Phi Kappa Hall/0020, 7-A
 Physical Education/1030, 4-J
 Physical Plant/1130, 3-I
 Physics/1003, 5-I
 Pi Kappa Alpha Fraternity/2203, 8-D
 Plant Sciences, Miller/1061, 3-L
 Post Office, Self Service/2637, 6-H
 Poultry Disease Research/2300, 3-C
 Poultry Research Laboratory, S. E./2699, 2-E
 Practice Field/2615, 6-N
 Psychology/0064, 5-E
 Psychology Auditorium, South/0063, 5-E
 Public Safety/0180, 6-G
 Recording for the Blind/2614, 8-F
 Reed Hall/0280, 5-F
 Russell Hall/2212, 9-K
 Rutherford Hall/1210, 5-J
 Richard Russell Agricultural Research Building/2646, 1-D
 Rusk Center, 6-C
 Sanford Stadium/0686, 4-G
 Sigma Chi Fraternity/2205, 7-F
 Sigma Delta Tau Sorority/2220, 7-P
 Sigma Nu Fraternity/2237, 3-H
 Snelling Hall/1643, 4-K
 Soule Hall/1220, 5-J
 Southern Regional Poultry Genetics Laboratory/4051, 1-B
 Stegeman Hall/0080, 6-G
 Swine Arthritis Research/2320, 3-D
 Tau Epsilon Phi Fraternity/2207, 7-C
 Tennis Court/2622-2623, 3-O
 Terrell Hall/0023, 6-B
 Thomas Street Annex/2601, 5-A
 Thomas Street, Shed/2602, 5-A
 Thomas Street, South/2600, 5-A
 Track Field/1662, 6-P
 Tucker Hall/1250, 2-J
 University Bookstore/0671, 5-F
 Veterinary Medicine Complex/1070, 3-M
 Veterinary Farm/2351, 1-N
 Visual Arts/0040, 6-B
 Visual Arts Annex/0026, 6-B
 Waddel Hall/0041, 6-C
 Wesley Foundation/2611, 6-M

THE UNIVERSITY SYSTEM OF GEORGIA

The University System of Georgia includes 33 state-sponsored, public institutions located throughout Georgia—4 universities, 14 senior colleges and 15 junior colleges.

A 15-member constitutional Board of Regents—one from each of the state's 10 Congressional Districts and five from the state-at-large—governs the University System which was established in 1932. Board members are appointed by the Governor, subject to state senate confirmation, for seven year terms.

The Chairperson, the Vice Chairperson, and other officers of the Board are elected by its membership. The Chancellor, who is not a Board member, is the chief executive officer of the Board and chief administrative officer of the University System.

The overall programs and services of the University System are offered through three major components: Instruction, Public Service/Continuing Education, Research.

INSTRUCTION includes programs of study leading to degrees, ranging from the associate (2-year) to the doctoral level, and certificates.

Requirements for admission to instructional programs are set by institutions, pursuant to policies of the Board of Regents which sets minimum academic standards and leaves each institution the prerogative of establishing higher standards. Application for admission should be made directly to institutions.

A Core Curriculum, defining freshmen and sophomore courses for students who seek degrees beyond the associate level, is in effect for all University System institutions. This 90-hour Curriculum includes 60 in general education—humanities, mathematics, natural and social sciences—and 30 in the student's chosen major area. It facilitates transfer of freshmen and sophomore credits within the University System.

PUBLIC SERVICE/CONTINUING EDUCATION includes non-degree programs, special college-degree-credit courses, and institutional outreach programs.

Non-degree activities would include short courses, conferences, seminars, lectures and consultative services in many interest areas. These activities, usually of short duration, are designed to meet special educational, informational and cultural needs of people served by institutions. All institutions conduct some non-degree public service/continuing education. College-degree-credit courses are typically offered through extension center programs and teacher education consortiums.

RESEARCH encompasses investigations conducted for the discovery and application of knowledge. These investigations include clearly defined projects in some cases and non-programmatic activities in other cases. Research is conducted on campuses and at other locations and projects relate to a large variety of educational objectives and societal needs. Most research is conducted by the 4 universities though some senior colleges also have research efforts underway.

Board of Regents' policies for government, management and control of the University System and the Chancellor's administrative actions provide institutions a high degree of autonomy. The President is the executive head of each institution and is recommended by the Chancellor and appointed by the Board.

The University System Advisory Council, with 34 committees, engenders continual dialogue on major academic and administrative matters and makes recommendations to the Chancellor, who transmits them to the Board as appropriate, regarding academic and administrative operations in the System. The Council consists of the Chancellor, the Vice Chancellor, and all Presidents as voting members. It includes other officials of institutions as nonvoting members. The Council's 21 academic and 13 administrative committees are composed of institutional representatives, typically one from each unit, and deal with matters of System-wide application.

State appropriations for the University System are requested by and made to the Board of Regents. Allocations of the appropriations are made by the Board to institutions. Approximately 52 percent of state appropriations are allocated for instruction. In fiscal 1980-81, the percentages of all funds for instruction showed 77 percent from state appropriations, 20 percent from student fees and 3 percent from other internal income.

Matriculation fees and nonresident tuition fees for students at all institutions are established by the Board of Regents. All students pay matriculation fees while out-of-state students pay nonresident tuition in addition. Other fees for student services and activities are established by institutions, subject to Board of Regents' approval. Non-mandatory fees established by institutions are subject to approval of the Board of Regents' office.

INSTITUTIONS OF THE UNIVERSITY SYSTEM OF GEORGIA

h—On-Campus Student Housing Facilities

Degrees Awarded: A—Associate; B—Bachelor's; J—Juris Doctor;
M—Master's; S—Specialist in Education; D—Doctor's

Universities

Athens 30602

University of Georgia—h; B,J,M,S,D

Atlanta 30332

Georgia Institute of Technology—h; B,M,D

Atlanta 30303

Georgia State University—A,B,M,S,D

Augusta 30912

Medical College of Georgia—h; A,B,M,D

Senior Colleges

Albany 31705

Albany State College—h; B,M

Americus 31709

Georgia Southwestern College—h; A,B,M,S

Augusta 30910

Augusta College—A,B,M

Carrollton 30118

West Georgia College—h; A,B,M,S

Columbus 31993

Columbus College—A,B,M

Dahlonega 30597

North Georgia College—h; A,B,M

Fort Valley 31030

Fort Valley State College—h; A,B,M

Marietta 30061

Kennesaw College—A,B

Marietta 30060

Southern Technical Institute—h; A,B

Milledgeville 31061

Georgia College—h; A,B,M,S

Savannah 31406

Armstrong State College—A,B,M

Savannah 31404

Savannah State College—h; A,B,M

Statesboro 30460

Georgia Southern College—h; A,B,M,S

Valdosta 31601

Valdosta State College—h; A,B,M,S

Junior Colleges

Albany 31707

Albany Junior College—A

Atlanta 30310

Atlanta Junior College—A

Bainbridge 31717

Bainbridge Junior College—A

Barnesville 30204

Gordon Junior College—h; A

Brunswick 31523

Brunswick Junior College—A

Cochran 31014

Middle Georgia College—h; A

Dalton 30720

Dalton Junior College—A

Douglas 31533

South Georgia College—h; A

Gainesville 30403

Gainesville Junior College—A

Macon 31297

Macon Junior College—A

Morrow 30260

Clayton Junior College—A

Rome 30161

Floyd Junior College—A

Swainsboro 30401

Emanuel County Junior College—A

Tifton 31793

Abraham Baldwin Agri. College—h; A

Waycross 31501

Waycross Junior College—A

University System of Georgia
244 Washington Street, S.W.
Atlanta, Georgia 30334



THE UNIVERSITY SYSTEM OF GEORGIA

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Bruce T. Shutt, *Registrar and Associate Vice President for Student Affairs*

William C. Marshall, *Associate Registrar*

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Claire C. Swann, *Associate Director*

Libraries

David F. Bishop, *Director*

THE GRADUATE SCHOOL

ADMINISTRATIVE OFFICERS OF THE GRADUATE SCHOOL

John C. Dowling, B.A., M.A., Ph.D., *Dean*

Harold W. Gentry, B.S., M.A., Ed.D.,
Associate Dean

Henry Branch Howe, Jr., A.B., M.A., Ph.D.,
Associate Dean

Eugene L. Heric, B.S., M.S., Ph.D., *Assistant
Dean and Coordinator of Instructional
Institutes*

Mary Ann Keller, A.B.J., *Director of Graduate
Admissions*

Kermit R. Jeffers, B.S., M.Ed., Ed.S., *Assistant
to the Dean*

Gail B. Ertel, B.S., M.Ed., *Administrative
Assistant to the Dean*

Marjorie Gordon, B.A., M.A., Ph.D.,
Administrative Assistant to the Dean

COLLEGES AND SCHOOLS

College of Arts and Sciences (1801)

William J. Payne, *Dean*

College of Agriculture (1859)

William P. Flatt, *Dean*

School of Law (1859)

J. Ralph Beaird, *Dean*

College of Pharmacy (1903)

Howard C. Ansel, *Dean*

School of Forest Resources (1906)

Leon A. Hargreaves, Jr., *Dean*

College of Education (1908)

Gerald R. Firth, *Acting Dean*

Graduate School (1910)

John C. Dowling, *Dean*

College of Business Administration (1912)

J.M. Tull School of Accounting (1977)

Albert W. Niemi, Jr., *Dean*

**School of Journalism and Mass
Communication (1915)**

John Thomas Russell, *Dean*

College of Home Economics (1933)

Emily Q. Pou, *Dean*

College of Veterinary Medicine (1946)

David P. Anderson, *Dean*

School of Social Work (1964)

Charles A. Stewart, *Dean*

School of Environmental Design (1969)

Darrel G. Morrison, *Dean*

GENERAL INFORMATION

HISTORY, PURPOSE AND ORGANIZATION

Prior to the formal establishment of the Graduate School, courses of postgraduate status were offered under the control of a faculty committee on graduate studies. In 1910, the formal organization of graduate studies into a Graduate School was authorized. Dr. Willis H. Bocock served as the Graduate School's first dean and was succeeded by R. P. Stephens, George H. Boyd, Gerald B. Huff, Thomas H. Whitehead, Hardy M. Edwards, Jr., and the present dean, John Dowling.

The Graduate School coordinates the graduate programs of all schools and colleges of the University. Matters of policy and procedure are determined by the graduate faculty through the graduate council. The graduate faculty consists of faculty members appointed by the President on the basis of productive research, effective teaching, and other creative activities. The policies adopted by the graduate council are administered by the Dean of the Graduate School.

The traditional degrees, Master of Arts and Master of Science, are offered in 27 and 32 disciplines, respectively. The Doctor of Philosophy degree is offered in 50 disciplines.

Professional masters' degrees are offered in 20 areas. Professional doctoral degrees are offered in education, music, and public administration.

ADMISSION

Requirements

Graduates of any institution accredited by the proper regional accrediting association are eligible to apply for admission to the Graduate School. Applicants should have ranked in the upper half of their undergraduate class and should have completed the equivalent of an undergraduate major in the field in which they propose to study. Applicants must submit with

the formal application two copies of official transcripts from all colleges and universities attended, including The University of Georgia,¹ two official copies of scores on a required entrance test, and three letters of recommendation. An application fee of \$10.00 is required for all new applications for admission to the Graduate School. This is a non-refundable fee and will not be credited toward the matriculation fee. Materials submitted in support of an application will not be returned.

Applications and supporting credentials must be received in the Graduate Admissions Office no later than 30 days prior to the first day of classes of the quarter the student plans to enter Graduate School. Foreign applicants must apply at least eight weeks prior to the first day of classes of the quarter they plan to enroll.

Each completed application, with supporting materials, is referred to the department in which the applicant proposes to study, where it is considered by the faculty of that department. No student will be admitted without the recommendation of an academic unit. Final consideration is given by the Dean of the Graduate School.

Students may not register unless they have been notified of their acceptance to the Graduate School by the Graduate Admissions Office. All students must be admitted prior to their registration.

An applicant who does not register for regular campus courses in the quarter for which admission was granted should inform the Graduate Admissions Office of the change in plans, and request a new date of admission if one is desired. Otherwise, the original admission will be cancelled, the applicant's file will be discontinued, and a new application will be required for admission at a later date.

¹There is no charge for issuing transcripts of University of Georgia graduates to the Graduate Admissions Office.

Entrance Tests

The Aptitude Test of the Graduate Record Examinations is an acceptable entrance test for admission as a prospective candidate for most graduate degrees. Applicants for admission to masters' programs in education may offer scores on the National Teacher Examinations if the examinations were taken prior to the Fall Quarter, 1982, administration, or the Miller Analogies Test in lieu of scores on the Graduate Record Examinations. The Graduate Management Admission Test is required for applicants seeking admission as prospective candidates for the Master of Business Administration, the Master of Accountancy, and the Master of Marketing Research degrees. Entrance test scores over six years old are not acceptable.

The Graduate Record Examinations and the Graduate Management Admission Test are offered several times a year at numerous testing centers in the United States and abroad. Advance registration is required. Registration forms and detailed information on the availability and character of each examination may be obtained from the Graduate School or by writing to the Educational Testing Service, Princeton, New Jersey 08541. The Miller Analogies Test is given at various colleges and universities as approved by The Psychological Corporation. For information concerning the test as given at The University of Georgia, contact the Office of Testing and Evaluation, Clark Howell Hall. For information concerning the test as given at other centers, contact the Psychological Corporation, 304 East 45th Street, New York, New York 10017.

Foreign Students

Since several months may be required to process an application from abroad, foreign nationals are urged to submit complete application materials as early as possible. The application must include the application form, two official transcripts from all colleges and universities attended, two official copies of test scores on an approved entrance test, a \$10.00 non-refundable application fee, and three letters of recommendation. Recommendations from teachers who are familiar with higher education programs in the United States are advantageous. Foreign applicants, for whom English is not their native tongue, must submit Test of English as a Foreign Language (TOEFL) scores in addition to scores on an approved entrance examination. The application of a student from abroad, complete with supporting materials, must be in the Graduate Admissions Office no later than eight weeks

prior to the first day of classes of the quarter for which admission is desired.

Readmission—Admission

A student who has been out of school four or more quarters, including the summer quarter, and is reapplying for the same degree must submit an application for "readmission" to the Graduate Admissions Office. NOTE: Students who have not enrolled during the previous six years must submit an application for "admission."

A student who has completed a graduate degree, and is applying for a second graduate degree, must submit an application for "admission" to the Graduate Admissions Office.

A student who is not currently enrolled and wishes to apply for a degree program *different* from that for which originally admitted must submit an application for "admission" to the Graduate Admissions Office.

A currently-enrolled student applying for a second graduate degree must submit an application for "admission" to the Graduate Admissions Office.

Applications for admission or readmission must be submitted at least 30 days prior to the first day of classes of the quarter the student plans to enroll.

Change of Degree Objective

Students approved for conditional admission may request a change of degree objective to that of prospective candidate for a degree after specified conditions have been met. To accomplish this, the departmental graduate coordinator should complete the form, *Request for Change of Degree Objective*, and submit it to the Graduate School. Upon approval of the request, the Graduate School will notify in writing all persons concerned.

If a currently-enrolled student wishes to change from one degree to another within the same department, e.g., M.S. in agronomy to Ph.D. in agronomy, the departmental graduate coordinator must complete the form, *Request for Change of Degree Objective*, and send it to the Graduate School. When the request is approved, the Graduate School will notify in writing all persons concerned.

A currently-enrolled student desiring to change from one degree and department/college to another degree and department/college, e.g., M.S. in biochemistry to M.Ed. in science education, must consult the graduate coordinator of the first department and the graduate coordinator of the department to

which transfer is requested. If the possibility of the transfer is agreeable to both departments, the student must write a letter to the Dean of the Graduate School requesting that the change be made. The Dean will ask the graduate coordinator of the first department to send the student's file to the graduate coordinator of the second department, who in turn will send a recommendation to the Graduate School on the form, *Request for Change of Degree Objective*. When approved, the Graduate School will notify in writing all persons concerned. If the second department does not wish to accept the student, the student will be notified that he/she cannot register in the Graduate School until accepted by another department.

Admission and Registration of Persons 62 Years of Age or Older

According to the provisions of an amendment to the Constitution of the State of Georgia, senior citizens who are residents of Georgia now have access to institutional services available through University System units at reduced costs. The rules adopted by the Board of Regents regarding admission and registration of persons 62 years of age or older in units of the University System are listed below:

1. Current or prospective students must be residents of Georgia, 62 years of age or older at the time of registration, and must present a birth certificate or other comparable written documentation of age to enable the registrar to determine eligibility.

2. Persons who have been accepted through regular admission procedures may enroll as regular students in courses offered for resident credit on a "space available" basis without payment of fees, other than supply, laboratory, shop, and transportation charges.

3. Prospective students must meet all system and institutional admission requirements to include official transcripts of all high school and/or college credit; entrance test scores, i.e., SAT, GRE, GMAT, etc.; letters of recommendation, and/or other materials as may be required.

4. Students will be provided access to all services available at any particular system unit which are applicable to the creation and maintenance of student and institutional records.

5. All degree seeking students must meet all system, institutional, and legislated degree requirements such as the Regents' Test, major area examinations, preliminary and final oral

and/or written examinations, and acceptable theses or dissertations.

6. Students may not enroll in dental, medical, veterinary, or law schools under the provisions of this policy.

The aforementioned rules became effective Fall Quarter, 1977.

Additional Information

Correspondence concerning admission to the Graduate School should be addressed to the Graduate Admissions Office, University of Georgia, Athens, Georgia 30602. Inquiries about facilities for advanced study and research, programs of study, and specific departmental requirements should be addressed to the appropriate department.

REGISTRATION

Complete registration instructions are included in The University of Georgia Schedule of Classes for each quarter. The Schedule of Classes is available in the Registrar's Office, departmental offices, and deans' offices the first week of the quarter preceding the quarter the student plans to register.

IN-SERVICE EDUCATION PROGRAM

The University provides graduate courses in a number of locations throughout the state so that students may continue their studies while at the same time continuing to carry out job-related responsibilities. Within specified limits, course credit earned through this program may be included in programs of study leading to many of the professional graduate degrees offered by the University. Students planning to register for in-service courses should consult with their major professor, or if a major professor has not been appointed, with a representative of the department in which they are enrolled, to ascertain if the courses in question are approved for inclusion in a program of study for a graduate degree.

STUDIES ABROAD PROGRAM

The University of Georgia sponsors an interdisciplinary study abroad program located in Cortona (Tuscany), Italy. The areas of study are art history, studio arts (ceramics, drawing, painting, printmaking, watercolor, papermaking, graphic design, calligraphy, sculpture, jewelry making), environmental design,

drama and theater, and Italian language. The ten-week program offers courses for undergraduate and graduate credit. Contact Marion Bowden, Visual Arts Building, (404) 542-7011.

STUDENT EDUCATION RECORDS

The University of Georgia guarantees any student, regardless of age, who is or has been in attendance at the University, the right of access to inspect and review any and all official records, files, documents, and other materials created during the period of enrollment which relate directly to him/her, subject only to certain specific exceptions. With other limited exceptions, no personally identifiable information from the education records of a student will be disclosed to any third party by any official or employee of the University without the written consent of the student.

Each student is guaranteed an opportunity to challenge the accuracy of information contained in any file or record to which he/she may have access, including the right to a hearing if so requested. Each student also has the right to file a complaint directly with the Department of Education whenever the student believes that the rights afforded him/her by the university policy or the Family Educational Rights and Privacy Act have been violated.

Copies of the complete University Policy Statement on Student Education Records may be obtained at the Registrar's Office, the Office of Judicial Programs, and the Office of the Vice President for Academic Affairs.

GENERAL REGULATIONS

Classification of Graduate Students

Only those students who are formally admitted to the Graduate School are eligible to register for graduate courses.

Applicants may be admitted to the Graduate School under any one of the following classifications:

1. *Prospective candidate for a degree.* An applicant who meets all requirements for admission to a degree program and who has been recommended by the department in which he/she proposes to study, may be admitted as a *prospective candidate* for a graduate degree.

2. *Nondegree.* An applicant who holds a master's or a doctor's degree from an accredited institution may apply for admission as a nondegree student by submitting an application supported by an official transcript of the

master's or the doctor's degree work. This classification permits a person to enroll for graduate courses without becoming a candidate for a degree. If a nondegree student is later admitted as a prospective candidate for a degree, work taken while in this classification may be included as part of a graduate degree program subject to departmental regulations, approval of the student's major professor, the departmental graduate coordinator, and the Dean of the Graduate School. Courses taken in this classification may not be included in a program of study leading to a Specialist in Education degree. Note: Some departments may require additional information. Persons applying for admission in this status should contact the appropriate department.

3. *Graduate Transient.* At the discretion of the department in which admission is sought, transient admission may be granted to a student in good standing in any recognized graduate school who wishes to enroll in the Graduate School for one quarter. The student must submit an application and certification of graduate standing in an accredited institution at least 30 days prior to the first day of classes of the quarter the student plans to enter Graduate School. A special form for this purpose is available from the Graduate Admissions Office. Later, if the student wishes to enroll as a prospective candidate for a degree, application to the Graduate School must be made in the usual way. Note: Some departments may require additional information. Persons applying for admission in this status should contact the appropriate department.

4. *Unclassified Postgraduate.* A graduate of a nonaccredited college or foreign institution, or one on whom some condition has been placed by the major department, may be admitted provisionally to a degree program by the Graduate School as an unclassified postgraduate. An unclassified postgraduate may later change his/her degree objective on the basis of entrance test scores, his/her record at The University of Georgia, and the recommendation of the department. Work taken while in this classification may be included as part of a graduate degree program subject to departmental regulations, and approval of the student's major professor, the departmental graduate coordinator, and the Dean of the Graduate School. Persons admitted provisionally will be expected to change their classification to that of prospective candidate for a degree during the second quarter of residence unless other conditions are specified on the letter of acceptance.

5. **Postbaccalaureate.** A person who holds a baccalaureate degree and wishes to enroll in graduate in-service courses for self-improvement and/or certification purposes only may apply for admission as a postbaccalaureate student. Prospective postbaccalaureate students must submit an application for admission to the Graduate School and two copies of transcripts from all colleges and universities attended. The application and transcripts should be in the Graduate Admissions Office 30 days prior to the date of registration for the in-service course in which the student plans to enroll. No admission fee is required with a postbaccalaureate application.

Postbaccalaureate credit may be applied to a limited extent toward an advanced degree if approved by the student's major professor, the departmental graduate coordinator, and the Dean of the Graduate School. Credit earned in this classification may not be applied to a program of study leading to a Specialist in Education degree.

Admission as a postbaccalaureate student does not usually permit registration for regular on-campus courses. If a student admitted in the postbaccalaureate classification subsequently wishes to enroll as a prospective candidate for a degree, he/she must so advise the Director of Graduate Admissions, submit appropriate test scores and recommendations, and pay the \$10.00 application fee.

Irregular Students

Applicants who have been denied admission to the Graduate School, if registered in the University, will be registered through the appropriate undergraduate school or college and classified as *irregular* students. No irregular student will be permitted to register for graduate courses, and no work taken while in this classification may be counted for credit toward any graduate degree.

Should the work of the irregular student prove to be of such quality as to justify admission to graduate status, reconsideration may be given to the application for admission at any time after the student has satisfactorily completed a minimum of fifteen quarter hours of approved undergraduate course work in classes on the campus and has submitted satisfactory scores on an appropriate entrance test.

Combined Degree Programs

The Graduate School offers certain combined degrees with other schools and colleges in the University.

Certain students in the College of Arts and Sciences may be eligible for completion of combined AB/MA or BS/MS programs in a four-year period. Students interested in these degree objectives should contact the University Honors Program.

Students interested in the JD/MBA or JD/MAcc four-year combined degree programs should contact the School of Law and the College of Business Administration.

Selected Pharmacy students may enter a combined degree program in which they receive the BS degree in Pharmacy at the end of their third professional year and the MS degree in Pharmacy at the end of one additional year.

Enrollment in Graduate Courses — Law/Undergraduate Students

Students enrolled in the School of Law, who hold a bachelor's degree from an accredited university/college and who are in good standing, may enroll in graduate courses with approval of their advisors and the Dean of the Graduate School. An approval form may be obtained in the School of Law.

Undergraduate students, participating in the Honors Program and who are in good standing, may register for graduate courses with approval of their advisors and the Dean of the Graduate School. An approval form may be obtained in the Honors Program Office.

Undergraduate students, having received prior approval, may enroll for up to ten quarter hours of credit to be included in a graduate program of study if they are within five hours of completing requirements for the undergraduate degree. They may enroll for five hours of such credit if they are within ten hours of completing degree requirements. This credit must be in 400-500 numbered courses which also have 600-700 listings. If work in the 400-500 numbered courses is satisfactory, credit at the graduate level will be granted after admission and registration in the Graduate School of The University of Georgia. A form to request prior approval may be obtained in the Graduate School.

Course Numbers

Courses numbered 800-900 are advanced graduate courses and seminars which provide educational experiences at the highest level in a graduate student's program of study. Courses numbered 600 are "fundamental knowledge" courses; those numbered 700 are "technique" and "professional" courses. Courses numbered 600-700 are normally taken early in

the graduate student's program of study. Joint undergraduate/graduate courses, numbered 400/600 and 500/700, in which undergraduate and graduate students are mixed, are not normally used to provide the core requirements of a graduate degree program. Such courses may be used as electives and as service courses taken in other departments.

Course Load

Graduate students using University facilities and/or staff time must register for a minimum of five quarter hours of credit each quarter. A full course load is 12-17 hours each quarter. Students who hold assistantships that require from one-third to one-half time service must register for a minimum of ten quarter hours of credit each quarter. Those students who hold assistantships requiring more than one-half time service must register for a minimum of five quarter hours of credit. It should be noted that, in the absence of an assistantship, many departments consider 15 hours per quarter as necessary for making normal progress toward a graduate degree.

The maximum course load for which a graduate student may enroll is governed by the following:

	Maximum Course Load (Qtr. Hrs.)
A student who does not have an assistantship	17
Graduate Assistants:	
One-third (1/3) time	12
Four-ninths (4/9) time	12
One-half (1/2) time	12
Two-thirds (2/3) time	6
Full-time employees of the University of Georgia	6

To exceed the maximum course load, students must obtain approval from their major professor and the Dean of the Graduate School. The department head or the departmental graduate coordinator may sign the overload request in the absence of the student's major professor.

Generally, a request to exceed the maximum course load will not be approved unless the student satisfies the following guidelines: (1) is a prospective candidate (or candidate) for a graduate degree, (2) has a cumulative graduate average of 3.5 or higher, (3) has no incompletes on his/her graduate record, and (4) is not a first-quarter student. Full-time University employees must obtain written approval for an overload from their immediate supervisor and the Dean of the Graduate School.

Application for Graduation

An application for graduation must be filed with the Registrar's Office no later than Friday of the first full week of classes two quarters prior to the anticipated graduation date. An application fee of \$10.00 must be paid by students receiving masters' or specialists' degrees. Candidates for doctoral degrees must pay an application fee of \$25.00. Application forms may be obtained from the Graduate School or the Registrar's Office. Candidates for graduate degrees should check periodically with the Graduate School concerning dates for filing applications as these dates are subject to change.

NOTE: Students must be registered for a minimum of five quarter hours of credit the quarter in which they complete all degree requirements. A graduate course, GSC 927 -Graduate Study Completion, may be used for this purpose in certain instances. This course is designed for students completing degree requirements who will be using staff time or University facilities and for whom no regular course is appropriate. Permission to register for this course must be granted by the Graduate School.

Graduation Exercises

Formal commencement exercises will be held only at the June graduation. Students who graduated in August, December, or March may participate in the June commencement exercises if they wish to do so. Candidates for degrees are urged to attend graduation exercises, but are not required to attend.

**Awarding Doctoral Degrees
— University Faculty**

No member of the faculty of The University of Georgia above the rank of instructor will be awarded a doctoral degree by the University.

Extension and Correspondence

Graduate credit is not allowed for work done in extension or by correspondence.

Use of Credit

Course and resident credit used to satisfy the requirements of one degree cannot be used to satisfy the requirements of another degree.

Cumulative Graduate Average

To be eligible for admission to candidacy and graduation, a student must maintain an average of 3.0 (B) on all graduate courses taken and on all courses on the program of study. No grade below C (2.0) will be accepted

as part of a program of study for a graduate degree.

Reporting System

The grade scale for graduate students is as follows:

A Excellent	90-100
B Good	80-89
C Satisfactory	70-79
D Passing	60-69
F Failure	Below 60

WF This designation indicates that the student was permitted to withdraw from a course while doing unsatisfactory work or withdrew after the midpoint of the grading period. The dropping of a course under these circumstances is equivalent to a failure. (A "W" will be assigned for withdrawals after the midpoint of the grading period in cases of hardship. A determination that a hardship exists must be made by the Office of the Dean of Students and communicated to the Graduate School.)

S This symbol indicates that credit has been given for completion of degree requirements other than academic course work. The grade of "S" must be assigned in thesis and dissertation courses (930), where student performance or progress is satisfactory. The use of this symbol is approved for seminars, "765" applied projects, "921" problems, internships, practicums, and research courses. Credit earned with an "S" grade will become part of cumulative hours earned, but the grade will not be included in the calculation of academic averages.

U This symbol indicates unsatisfactory performance or progress in an attempt to complete degree requirements other than academic course work. The grade of "U" must be assigned in thesis and dissertation courses (930), where student performance or progress is unsatisfactory. The use of this symbol has been approved for seminars, "765" applied projects, "921" problems, internships, practicums, and research courses. No credit is earned by a "U" grade. The grade is not included in the calculation of academic averages.

Once earned and recorded, a "U" grade cannot be changed to another grade. A "U" is not acceptable as a terminal grade for thesis, problem, and dissertation courses.

If a student does not receive a grade in a course for which he/she enrolled, one of the

following designations must be placed on the student's record:

I This letter indicates that a student was doing satisfactory work, but for nonacademic reasons beyond his/her control, was unable to meet full requirements of the course. A change of grade for an "incomplete" should be submitted on the standard form during the nine months following assignment of the "I." After the nine-month period has expired, any request for a change of grade will be approved only under exceptional circumstances. Any such request must be accompanied by a letter of justification from the instructor and approval from the head of the department in which the course was taught. When an "incomplete" is not removed after three quarters of enrollment, the "I" automatically becomes an "F."

W This designation indicates that the student was permitted to withdraw from a course without penalty. Withdrawals without penalty will not be permitted after the midpoint of the total grading period except in cases of hardship. A determination that a hardship exists must be made by the Office of the Dean of Students and communicated to the Graduate School.

V This designation indicates an audit. No credit is given for an audit. Students may not transfer from audit to credit status or vice versa after the closing of the drop/add period of each quarter.

When a graduate course is repeated, the last grade received will be used in calculating the cumulative graduate average that is used for probation, dismissal, admission to candidacy, and graduation. Grades received in all graduate courses will be included in the graduate cumulative average.

Conversion of Letter Grades to Grade Points

For purposes of computing quarterly, yearly, and cumulative grade point averages, letter grades must be converted into numerical equivalents. The equivalents are:

A	4.0	WF	0
B	3.0	I	*
C	2.0	S	*
D	1.0	U	*
F	0	V	*

*Not computed

Probation and Dismissal

Students may be dismissed by their department at the end of any quarter if they have not made sufficient academic progress to warrant continuance of study. Termination of students will follow policies and procedures adopted by the department. When students are terminated by a department, but not simultaneously by the Graduate School, they may apply for admission to another graduate program if they wish to do so.

Students with a cumulative graduate course average below 3.0 for two consecutive quarters are placed on academic probation by the Graduate School. They then must make a 3.0 or higher quarterly graduate average each succeeding quarter that their overall cumulative graduate average is below 3.0. These students are no longer on probation when their cumulative graduate average is 3.0 or above. If they make below a 3.0 quarterly graduate average while on probation, they are dismissed. When students repeat a graduate course, the last grade will be utilized to calculate the cumulative graduate average that is used for probation and dismissal. Grades of "S", "U", "I", and "V" will not be used in calculating the cumulative graduate average. When students are dismissed under the terms of this policy, they may not apply for admission to another graduate program offered by the University.

Students who are dismissed by the Graduate School for academic reasons may appeal the dismissal to the Dean of the Graduate School. Information concerning the appeal process may be obtained in the Graduate School.

Resident Credit in Graduate Centers

I. For course work leading to a professional master's degree, credit on a resident basis will be granted for graduate courses taken at a graduate center approved by the Board of Regents, provided:

1. the student has been admitted to the Graduate School of The University of Georgia prior to taking the course;
2. the physical facilities such as classrooms, library, and teaching aids are adequate as determined by a site visit of at least three persons, one appointed by the dean of the school or college offering the course, one appointed by the Director of Libraries, and one appointed by the Dean of the Graduate School; and
3. the instructor is the same one who teaches the course on campus, or is approved by the dean of the school or college offering

the course and the Dean of the Graduate School.

II. Resident credit will be granted for course work, or research, leading to degrees other than professional masters' degrees offered at off-campus locations provided:

1. the student has been admitted to the Graduate School prior to taking the course;
2. the requirement of three consecutive quarters of full-time work on campus in Athens for all doctoral students is satisfied;
3. the requirement of three quarters of full-time work on campus in Athens (which need not be consecutive) is, in general, satisfied for all candidates for M.A. and M.S. degrees. An exception to the above may be made for students who prefer to spend one quarter of full-time work abroad in a program of study approved by The University of Georgia or the Board of Regents. Such study shall be counted as resident credit; and
4. the instructor is the same one who teaches the course or directs the research on campus, or is approved by the dean of the school or college offering the work and the Dean of the Graduate School.

HOUSING

Although Graduate students reside in all of the residence halls, most prefer to live in Morris and Mary Lyndon Halls, both of which are air-conditioned. Morris Hall houses 148 male students and is located on north campus near the College of Business Administration and the School of Law. Mary Lyndon houses 123 female students, is completely carpeted and has cable T.V. outlets in each room. Snelling Dining Hall, the College of Home Economics, the Science Center, and the College of Education are located nearby. Applications for on-campus housing will be accepted after students have been admitted to the University. Contact the Department of University Housing, Russell Hall, The University of Georgia, Athens, Georgia 30602, (404) 542-1421, for additional information.

Five hundred forty-five one and two-bedroom furnished and unfurnished apartments are available for married students in the on-campus family housing complex. Applications and additional information may be obtained by writing or calling the Family Housing Office, The University of Georgia, 710 East Campus Road, Athens, Georgia 30602, (404) 542-1473.

For your convenience, the Department of University Housing maintains a listing of off-campus housing facilities. Inquiries should be directed to the Housing Office, Russell Hall.

EXPENSES

Residents of Georgia pay a matriculation fee of \$1,242 per academic year of three quarters, payable \$414.00 at the beginning of each quarter. Non-residents pay an additional amount of \$656.00 per quarter. Any resident student who registers for less than 12 quarter hours pays \$28.00 per hour plus an \$86.00 activity, athletic, transportation, and health fee. Any non-resident student who registers for less than 12 quarter hours pays \$83.00 per hour plus an \$86.00 activity, athletic, transportation, and health fee. The estimated cost of education for a Georgia resident is \$4,200 for the 1984-85 academic year. This estimate includes tuition and fees, books and supplies, room and board, and personal expenses for three quarters. The additional out-of-state fee assessed all non-Georgia residents increases this estimate to \$6,150. This does not include travel, clothing, and incidental expenses.

A candidate for a master's or specialist in education degree must pay a \$10.00 graduation fee, and a candidate for a doctoral degree must pay a \$25.00 graduation fee. The doctoral candidate must also pay a \$35.00 microfilm fee. All fees at the University are subject to change at any time as approved by the Board of Regents.

Agencies sponsoring regularly-enrolled students who receive special academic programming or administrative services are expected to pay fees in addition to those normally charged for the usual administrative services. While rates charged will be determined by contract arrangements, the scheduled fees for such services will be \$125.00 per quarter, payable in U.S. dollars only.

FEE REFUNDS

Students who formally withdraw from the University prior to the first day of classes are entitled to a refund of 100 percent of fees paid for that quarter; within one week following the first day of classes, 80 percent; from one week to two weeks after the first day of classes, 60 percent; from two to three weeks after the first day of classes, 40 percent; from three to four weeks after the first day of classes, 20 percent. Refunds will be made at the end of a quarter. No refunds for reduction in hours after the drop/add period are allowed

unless such reduction is the fault of the University.

The following are not entitled to any refund of fees paid: students who withdraw after a period of four weeks has elapsed from the scheduled registration date; students suspended for disciplinary reasons; students who leave the University when disciplinary action is pending, or who do not formally withdraw.

RESIDENT/NON-RESIDENT STUDENT CLASSIFICATION

With respect to resident/non-resident student classification, University System policies provide:

1. (a) If a person is 18 years of age or older, he or she may register as a resident student only upon showing that he or she has been a legal resident of Georgia for a period of at least 12 months immediately preceding the date of registration.
(b) No emancipated minor or person 18 years of age or older shall be deemed to have gained or acquired in-state residence status for fee purposes while attending any educational institution in this State, in the absence of a clear demonstration that he or she has in fact established legal residence in this State.
2. If a person is under 18 years of age, he or she may register as a resident student only upon showing that his or her supporting parent or guardian has been a legal resident of Georgia for a period of at least 12 months immediately preceding the date of registration.
3. A full-time employee of the University System and his or her spouse and dependent children may register on the payment of resident fees.
4. Non-resident graduate students who hold teaching or research assistantships requiring at least one-third time service may register as students in the institution in which they are employed on payment of resident fees.
5. Full-time teachers in the public schools of Georgia and their dependent children may enroll as students in the University System institutions on the payment of resident fees.
6. All aliens shall be classified as non-resident students; provided, however, that an alien who is living in this country under a visa permitting permanent residence shall have the same privilege of qualifying for resident status for fee purposes as a citizen of the United States.

7. Foreign students who attend institutions of the University System under financial sponsorship of civic or religious groups located in this State, may be enrolled upon the payment of resident fees, provided the number of such foreign students in any one institution does not exceed the quota approved by the Board of Regents for that institution.
8. If the parents or legal guardian of a minor changes his or her legal residence to another state following a period of legal residence in Georgia, the minor may continue to take courses for a period of 12 consecutive months on the payment of resident fees. After the expiration of the 12-month period the student may continue his/her registration only upon the payment of fees at the non-resident rate.
9. In the event that a legal resident of Georgia is appointed as guardian of a non-resident minor, such minor will not be permitted to register as a resident student until the expiration of one year from the date of court appointment and then only upon proper showing that such appointment was not made to avoid payment of the non-resident fees.
10. Career Consular Officers and their dependents who are citizens of the foreign nation which their Consular Office represents and who are stationed and living in Georgia under orders of their respective governments, shall be entitled to enroll in University System institutions on payment of resident fees. This arrangement shall apply to those Consular Officers whose nations operate on the principle of educational reciprocity with the United States.
11. Military personnel, and their dependents, stationed in Georgia and on active duty, except military personnel assigned to System institutions for educational purposes, shall pay the same fees assessed residents of Georgia.
12. A nonresident student who is financially dependent upon a parent, parents or spouse who has been a legal resident of Georgia for at least twelve consecutive months immediately preceding the date of registration, shall pay the same fees assessed residents of Georgia; provided, however, that such financial dependence shall have existed for at least twelve consecutive months immediately preceding the date of registration.

FINANCIAL ASSISTANCE AND AWARDS

General University Awards

The Graduate School each year selects graduate non-teaching assistants and graduate research assistants from a list of applicants who are recommended by their major departments. Each applicant is rated by a faculty panel. Ratings are based on the applicant's academic record, test scores, and recommendations. Application blanks may be obtained from the Graduate School. Applications for these awards must be filed no later than February 15 of each year.

Graduate Non-Teaching Assistantships.

These assistantships carry a stipend of \$7,142 to \$7,617 for a 12-month appointment, and \$5,356 to \$5,712 for a nine-month appointment. One-third time service is required with a maximum course work load of 12 quarter hours. Out-of-state fees are waived for non-teaching assistants who perform at least one-third time service.

Graduate Research Assistantships.

These assistantships carry a stipend of \$7,142 to \$7,617 for a 12-month appointment and require one-third time service with a maximum course work load of 12 quarter hours. Out-of-state fees are waived for graduate research assistants who perform at least one-third time service.

Predoctoral Assistantships

Predoctoral assistantships are awarded on a competitive basis to faculty members of Georgia colleges upon nomination by the president of the college in which they are teaching. The stipend is approximately \$9,495 per academic year. Predoctoral assistants enroll for full-time graduate work. Nominations should be made to the Director of the Institute of Higher Education, University of Georgia, by February 15 of each year.

Departmental Awards

A variety of fellowships, scholarships, and assistantships are awarded by the various departments and divisions of the University. Out-of-state graduate students who hold assistantships which require at least one-third time service are assessed fees on a resident basis. Deadlines for submitting applications for departmental assistantships vary among departments. For information concerning

these awards contact the appropriate department.

Teaching or Research Assistantships.

These assistantships carry stipends ranging from \$3,000 to \$7,283 depending on the qualifications of the applicant, period of appointment, and the amount of work specified. Application should be made to the student's major department.

Alcoa Foundation Fellowship.

This fellowship is awarded to a graduate student or prospective graduate student in public relations. The stipend of \$1,750 is normally awarded annually to a student selected by the Graduate Committee. Application should be made to the Director of Graduate Studies, School of Journalism and Mass Communication.

The Alvin B. Biscoe Fellowship.

This fellowship was established in 1967 by Mrs. Helen Biscoe in memory of her husband. Dr. Biscoe served as Dean of the College of Business Administration from 1945 to 1949 and later as Dean of Faculties of the University. This fellowship is awarded annually to two outstanding entering doctoral students in the College of Business Administration. Awards are based on scholastic achievements and professional potential.

A. S. Edwards Award.

The student is chosen for excellence of scholarship, meritorious conduct, service to the Psychology Department, and future promise as a scholar. This award was established by The University of Georgia Chapter of Psi Chi to honor Austin Southwick Edwards, Head, Department of Psychology, 1916 to 1951.

Charles L. Darby Award

Awarded annually for excellence in instruction to the outstanding graduate teaching assistant in the Department of Psychology.

The Dolores Artau Scholarship in Romance Languages.

A \$1,000 scholarship is given annually to a master's or doctoral student already enrolled at The University of Georgia, or to a student who is applying for admission to a graduate program in Romance Languages at The University of Georgia.

E. G. Dawson Graduate Assistantships in Agriculture.

These assistantships are available at the master's or doctoral level and are paid at the same monthly rate as the Graduate School establishes each year for one-third time

master's and doctoral level graduate assistants. The stipends are paid monthly over a period of ten months and the number of stipends varies depending upon earnings of the E.G. Dawson Endowment Fund.

Gamma Iota Sigma Scholarship.

Various members of the Georgia insurance industry have contributed to the Gamma Iota Sigma Scholarship. Up to five \$600.00 scholarships are awarded each year. The Risk Management and Insurance Department, at its discretion, may supplement this scholarship for an additional \$400.00. The maximum award is \$1,000.

Genetics Predoctoral Training Grant, National Institutes of Health.

These fellowships for graduate study in the area of genetics carry a stipend of \$5,040 for a 12-month period and in addition includes the provision for reimbursement of tuition and fees and certain travel expenses. Application should be made to the Graduate Coordinator, Department of Molecular and Population Genetics.

Georgia Bankers' Association Master's Scholarship.

This scholarship was established in 1978 by the Georgia Bankers' Association to recognize academic achievement and potential in a banking career. Students holding a master's level assistantship through the College of Business Administration and specializing in the field of banking and finance are invited to apply for the \$400.00 supplement to the assistantship stipend. Application should be made to the Academic Coordinator of Graduate Studies, College of Business Administration. Selection of recipients is made by a faculty committee.

Georgia Bankers' Association Doctoral Fellowship.

The Georgia Bankers' Association established this fellowship in 1979. Doctoral students in finance are invited to apply for the \$5,000 stipend. This fellowship requires one-third time service devoted to the Georgia Bankers' School. Application should be made to the Academic Coordinator of Graduate Studies in the College of Business Administration. Selection of the recipient is made by a faculty committee.

Georgia Feed and Grain Association Graduate Fellowship in Animal Nutrition.

This fellowship of \$1,500 is awarded annually to a U.S. citizen who is a graduate student in

animal nutrition or in animal science, dairy science, or poultry science with a major in animal nutrition. Funds for the award are provided by the Georgia Feed and Grain Association. This non-renewable fellowship is in addition to and independent of any other financial support.

The Georgia Journal of Accounting Fellowships.

These fellowships were established in 1979 by the J. M. Tull School of Accounting. Students pursuing a graduate degree in accounting are invited to apply for the \$3,300 stipend. These fellowships require one-third time service devoted to the GEORGIA JOURNAL OF ACCOUNTING. Application should be made to the J. M. Tull School of Accounting, College of Business Administration. Selection of recipients is made by a faculty committee.

The Hand Fellowship.

This fellowship was established in 1982 by Mr. and Mrs. Frederick B. Hand, III. The fellowship is awarded annually to an outstanding entering MBA student. The student must be a recipient of a graduate assistantship and receives a \$1,000 supplement to the assistantship stipend.

Hazel and Gene Franklin Scholarships.

Three scholarships are available, undergraduate and/or graduate. Selection is based on scholastic achievement, leadership ability, and professional commitment. Application should be made to the Dean of the College of Home Economics.

Henry L. Richmond Graduate Scholarship.

A portion of the income from the Henry L. Richmond Fund is used to provide scholarships in the Department of Chemistry. One or more \$1,000 scholarships are available each year.

The Herbert Zimmer Scholar Awards.

Each year an outstanding third- or fourth-year graduate student in each area of specialization in the Department of Psychology is selected to receive a Herbert Zimmer Scholar in Psychology Award. These awards recognize outstanding potential for research and include a cash prize of \$100.

Hubbard Farms Charitable Foundation Graduate Scholarship.

This scholarship is made annually to a doctoral level student in the Department of Poultry Science in recognition of academic record, research accomplishments, and service to the

department. The stipend is \$1,200 each year. Selection of recipients is made by a faculty committee.

John Sanford Levy Memorial Award in Marine Geology.

A fund was established in 1970 in memory of John Sanford Levy, an outstanding graduate student in marine geology, by his wife, Elizabeth, and by his parents, Dr. and Mrs. Alvin Thomas Levy. The income from this fund is used to support a graduate student in the Department of Geology in the specific area of marine sciences. In recent years the award has been between \$500.00 and \$700.00. Application should be made to the Department of Geology.

Marketing Research Fellowships.

Arthur C. Nielsen, Sr. Fellowship donated by A. C. Nielsen Company.

Warren Cordell Fellowship donated by A. C. Nielsen Company.

M/A/R/C Fellowships donated by Marketing and Research Counselors, Inc.

Burke Marketing Services Fellowship donated by Burke Marketing Services, Inc.

Frito-Lay Fellowship donated by Frito-Lay, Inc.

Market Facts Fellowship donated by Market Facts, Inc.

Schrader Research & Rating Service Fellowship donated by Schrader Research & Rating Service.

Coca-Cola Fellowship donated by The Coca-Cola Company.

Audits & Surveys Fellowship donated by Audits & Surveys, Inc.

These fellowships are awarded annually to master's students in the marketing research program of the Department of Marketing and Distribution. The stipend is \$4,200 for the academic year. Selection of recipients is made by a marketing faculty committee.

Martha Jo Walker Johnson Memorial Fund.

This fund was established in 1973 by Dr. Richard E. Johnson in memory of his wife. This fund is to provide one or more annual awards to graduate students majoring in social psychology who need financial assistance to complete research projects. Preference is to be given to female students, to be selected by a committee composed of the Social Psychology Program faculty.

Martin Reynolds Smith Fund.

By the gift of \$2,000, Mr. J. Warren Smith established this fund in memory of his son, Martin Reynolds Smith. The interest from this investment is to be used as prizes for excel-

lence in research in chemistry. Applications should be directed to the head of the Department of Chemistry.

Miller Audit Research Center Fellowship.

Arthur Andersen and Company Foundation established this fellowship in 1979 in honor of Dr. Herbert E. Miller, Director of the J. M. Tull School of Accounting. Students pursuing the Master of Accountancy degree are invited to apply for the \$4,000 stipend. This fellowship requires one-third time service devoted to the School's Center for Audit Research. Application should be made to the J. M. Tull School of Accounting, College of Business Administration. Selection of the recipient is made by a faculty committee.

Mills B. Lane Doctoral Fellowship.

This fellowship was established in 1980 by the Mills B. Lane Foundation. Students holding doctoral assistantships in the field of finance are invited to apply for the \$500.00 supplement to the assistantship stipend. Application should be made to the Academic Coordinator of Graduate Studies, College of Business Administration. Selection of the recipient is made by a faculty committee.

O. William Gottlieb Scholarship.

This scholarship was established in memory of relatives. The scholarship is awarded annually to an MBA assistantship recipient based on scholastic achievements. The \$200.00 scholarship is a supplement to the assistantship stipend.

Phelps-Stokes Graduate Fellowship.

The holder of this fellowship must pursue studies in one of the following departments—sociology, economics, education, or history. He/she must make a scientific study of the role of blacks in American civilization. The value of this scholarship at present is \$500.00 a year. Application should be made to the student's major department in the University.

Robert A. Sheldon Scholarship.

This award is made yearly to a student in the Department of Zoology for summer research at a field station or marine laboratory not affiliated with The University of Georgia. The stipend is \$500.00 each year. Application should be made before January 15 to the head of the Department of Zoology.

Robert S. Spencer Scholarship.

The Robert S. Spencer scholarship for \$1,000 is presented to a graduate student in Risk

Management and Insurance each year. The award is presented by the Robert S. Spencer Memorial Fund, Inc.

Rosabelle Carr Koelsche Scholarship.

Two scholarships are available, one graduate and one undergraduate. To be eligible to apply for the scholarships, applicants must be currently enrolled in the College of Home Economics. Awards are made on the basis of scholastic achievement and professional goals. Applications are available at the College of Home Economics.

Teresa and Robert Blumberg Scholarship.

This scholarship was established in memory of relatives. The \$200.00 scholarship is awarded annually to an outstanding MBA assistantship recipient. The award is based on scholastic achievements and is a supplement to the assistantship stipend.

Times-Mirror Foundation Minority Scholarship.

This scholarship sponsored by the Times-Mirror Foundation carries an annual stipend of approximately \$4,000. The recipient must be a minority student with outstanding potential in journalism/mass communication. Application materials are available from the Director of Graduate Studies, School of Journalism and Mass Communication.

Wyck Knox Scholarship.

This scholarship was established in 1977 in memory of Wyck Knox, Sr. The \$600.00 scholarship is awarded annually to an outstanding MBA assistantship recipient. The award is based on scholastic achievements and is a supplement to the assistantship stipend.

FACILITIES FOR GRADUATE RESEARCH

Oak Ridge Associated Universities

The University of Georgia is one of the sponsors of Oak Ridge Associated Universities (ORAU), a not-for-profit corporation of approximately 50 colleges and universities. ORAU, established in 1946, conducts programs of research, education, information, and human resource development for the Department of Energy and other government and private organizations. It is particularly interested in three areas: energy, health, and the environment.

Among ORAU's activities are competitive programs to bring undergraduate and graduate students and faculty members to work on research problems at the research facilities of DOE. Participants are selected by ORAU and the staffs of the facilities participating in the ORAU programs, which are Oak Ridge National Laboratory; the Oak Ridge Y-12 Plant; the Oak Ridge Gaseous Diffusion Plant; the Atmospheric Turbulence and Diffusion Laboratory in Oak Ridge; the Savannah River Laboratory and Savannah River Ecology Laboratory in Aiken, South Carolina; the Comparative Animal Research Laboratory in Oak Ridge; the Puerto Rico Nuclear Research Center; and the DOE Energy Technology Centers in Bartlesville, Oklahoma; Pittsburgh, Pennsylvania; and Morgantown, West Virginia. The ORAU Institute for Energy Analysis, the Medical and Health Science Division, the Manpower Education, Research, and Training Division, and other ORAU programs are also open to qualified students and faculty members.

Of particular interest are short specialized courses for scientists, engineers, educators, and students in fields ranging from energy production and the environment to future energy resources, developed and conducted by ORAU's Professional Training Programs.

Undergraduate. The ORAU Student Research Participation Program offers juniors majoring in the sciences, engineering, and mathematics an opportunity to spend 10 weeks during the summer working in directed research programs at the above sites.

Graduate. The ORAU Laboratory Graduate Participation Program enables a candidate for an advanced degree, upon completion of all requirements for work-in-residence, except research, to work toward completion of the student's research problem and preparation of the thesis at one of the participating sites.

Faculty. Faculty members of The University of Georgia, under the ORAU Faculty Research Participation Program, can go to a DOE facility for varying periods, usually three months in summer, for advanced study and research. It also is possible to combine a sabbatical with a longer appointment.

Faculty members also may be appointed to the Department of Energy's Fossil Energy Offices in Washington, D.C., to participate in program planning and review.

Stipends. Student stipends are at fixed rates that change from time to time. Faculty stipends are individually negotiated, based upon the current institutional salary.

A copy of the bulletin and announcement

of the ORAU-DOE university-laboratory programs is available in the Office of the Assistant Vice President for Research. Bulletins also may be obtained by writing the University Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37830.

Interested persons should ask for assistance from Nathan W. Dean, Assistant Vice President for Research, who serves as the ORAU Councilor at The University of Georgia.

Marine Facilities

Two coastal facilities, the Marine Institute and the Skidaway Institute of Oceanography, are available to The University of Georgia for research and training in marine sciences.

The Marine Institute is located on Sapelo Island in a setting of diverse natural marine habitats. Staffed by The University of Georgia, the Institute is a valuable resource, both in terms of a direct contribution to an understanding of the estuarine and nearshore environment and in implementing the training of students. Partial support is provided by the Sapelo Island Research Foundation, a private, charitable, nonprofit organization funded by the late Mr. R. J. Reynolds.

In 1976, under the Coastal Zone Management Act of 1972, the nation's second estuarine sanctuary was established encompassing the southern portion of Sapelo Island, the Duplin River, and adjacent wetlands and surrounding areas. The primary purpose of the sanctuary is to provide a natural area so that ecological relationships can be studied over a period of time. The Sapelo Island National Estuarine Sanctuary is managed by the Georgia Department of Natural Resources. Under a lease agreement with the State, however, the University of Georgia Marine Institute occupies facilities for the conduct of research aimed at understanding the flow of energy, the cycling of materials, and the factors regulating the metabolism of the salt marsh and nearshore ecosystems.

The Institute's resident staff consists of about 10 scientists and a number of technical and support personnel. Members of the campus faculty and students, as well as scientists and students from other institutions, are in periodic residence at the Institute. No formal academic training is offered, although field trips and graduate research by campus-based groups are encouraged. Current research programs include the areas of marine biology, microbiology, marsh ecology, and plant physiology. These programs utilize the marine and estuarine habitats surrounding the Institute.

The Skidaway Institute of Oceanography, located on Skidaway Island, was established in 1967, and operates as a unit of the University System of Georgia. The Institute does not grant degrees, but cooperative programs with other institutions make it possible to conduct graduate research in the marine sciences at the Institute under the direction of campus or Institute staff. Current research emphasizes problems in applied and basic oceanography, especially those related to the functioning of natural and perturbed marine ecosystems with increasing emphasis on the inner and outer continental shelf areas.

Limited accommodations for visiting scientists and students from The University of Georgia and other institutions are available at both research facilities.

Both institutes offer research and training opportunities in the marine science field for selected advanced students sponsored by departments having an interest in marine studies.

Organization for Tropical Studies

The Organization for Tropical Studies (OTS), a nonprofit scientific and educational corporation, was formed in 1963 by a group of American educational institutions that have a long history of interest in developing tropical science. The member institutions—The Universidad de Costa Rica, University of California, University of Connecticut, Duke University, University of Florida, University of Georgia, Harvard University, University of Hawaii, Indiana University, University of Kansas, Louisiana State University, University of Miami, University of Michigan, Michigan State University, North Carolina State University, Smithsonian Institution, University of South Carolina, Texas Technological College, University of Washington, and University of Wisconsin—are dedicated to the purpose of developing a sound educational and research program with adequate facilities and support to provide the base support for a massive effort in solving problems in tropical science. Initial emphasis was placed on biological sciences and closely allied fields, but activities have been expanded gradually to include other fields in which study may be most effectively carried out in the tropics.

The initial objectives of the OTS are:

1. to provide a sound formal educational base in tropical biology available to all interested students and scientists in the Americas;
2. to contribute to the education of students and scientists by providing basic back-

- ground and facilities for tropical research;
3. to develop an educational center that will provide fundamental insight into the principles of tropical biology;
4. to develop an educational center that will provide an intellectual resource in science for the hemisphere; and
5. to stimulate and assist programs of education and research throughout the tropics, primarily through the education of competent tropical scientists.

To implement these objectives, OTS has established an educational center for tropical studies in Costa Rica. Central headquarters are in San Jose in association with the campus of the Universidad de Costa Rica, but the entire republic serves as a classroom and laboratory. Establishment of a network of field stations in appropriate tropical habitats where classes may meet continuously from one to several weeks is an integral feature of OTS planning. OTS is committed to the concept that in order to solve the problems of tropical education and meet the goals of the organization it is necessary to maintain a continuing program of course work presented in a rigorous and organized manner. Coordinated with the course program must also be a program of research to insure maximum intellectual challenge.

Enrollment in OTS courses is based on national competition, with graduate students and recent postdoctoral faculty selected on the basis of academic record and interest in tropical studies. Descriptions of regularly presented courses and their prerequisites are given under listings in biology, forestry, and geography.

The University of Georgia Tropical Studies Group, with about 50 members in 19 departments, sponsors seminars and workshops on the campus in support of the OTS field program. Membership is open to graduate students and faculty.

Interested persons should contact Dr. Carl Jordan, Institute of Ecology, or Dr. Nathan W. Dean, Assistant Vice President for Research, who serve on behalf of the University as members of the OTS Board of Directors.

Institute of Ecology

The Institute of Ecology was founded in 1961 to promote interdisciplinary research in ecology, especially large-scale system-level studies of major environments such as forested watersheds, wetlands, lakes, rivers, tropical rain forests, and agroecosystems. The Institute also has a service division that organizes

courses, and workshops for governmental and private agencies and conducts or consults on special studies in applied ecology. A core administrative, technical and professional staff is supported by state funds. Most of the support for the large research projects and for graduate and post-doctoral students working on these projects comes from grants. Senior researchers are for the most part members of academic departments as well as members of the Institute. Faculty participating in the ecology advanced degree program (an inter-departmental degree) are all joint institute-department members. The Institute is not an academic department but works with all interested departments in promoting research, service, and graduate student training.

In addition to scientists supported through the Institute, a large membership includes both faculty members and graduate students. Members are in agronomy, anthropology, botany, business management, computer science, entomology, environmental design, environmental education, environmental law, forest resources, geography, geology, horticulture, mathematics, microbiology, plant pathology, poultry science, statistics, and zoology. Besides these academic units, members are on the staffs of the Institute of Community and Area Development, Institute of Government, Institute of Natural Resources, and the Marine Sciences Program. Ecologists from the U.S. Forest Service and U.S. Environmental Protection Agency who closely interact with Institute scientists are also members. In addition, the U.S. National Park Service has a cooperative research unit in the Institute.

Many of the programs are based on research dating more than twenty years. Research sites in Georgia, across the nation, and in foreign countries are used by university ecologists. Field work in the state takes place at the UGA Marine Institute on Sapelo Island, Skidaway Institute of Oceanography, the Okefenokee Swamp, the Coastal Plains Experiment Station as well as various forests, deserted farmlands, and granite outcrops. Researchers also study at the Yellowstone National Park, the U.S. Department of Energy Savannah River Plant, the U.S. Forest Service Coweeta Hydrologic Laboratory, the Amazon Forest in Venezuela and several other tropical countries. Graduate students participate in the various Institute research projects. Their research usually contributes to their thesis or dissertation.

In addition, a special graduate student research program is offered through the Institute's Savannah River Ecology Laboratory

(SREL). Funded by the U.S. Department of Energy, the laboratory is located on DOE's 250,000 acre Savannah River Plant. The site contains a variety of natural and disturbed habitats. Nuclear reactors and support facilities provide opportunities for research on the environmental effects of heated effluents and on the biological uptake and cycling of radio-nuclides and stable elements. Research is jointly supervised by the student's university research committee and SREL. Stipends are available. Persons interested in the program should contact Mr. Roland C. Thurlow, SREL, DRAWER E, Aiken, South Carolina 29801. All participants in SREL's educational program must be U.S. citizens.

For additional information on the Institute of Ecology, contact Dr. James L. Cooley, Institute of Ecology, University of Georgia, Athens, Georgia 30602. For additional information on the advanced degree program in Ecology, contact Dr. D.A. Crossley, Department of Entomology, Biosciences Building, University of Georgia, Athens, Georgia 30602.

Institute for Behavioral Research

The Institute for Behavioral Research is a multidisciplinary research organization, the purpose of which is to encourage a pooling of the expertise of staff members and graduate students from various departments to attack significant social and behavioral problems at both basic and applied levels.

Staff members are assembled from such departments as geography, management, political science, educational psychology, psychology, and sociology. All staff members hold faculty rank in their respective departments and normally are appointed one-third time in the Institute. Most hold research grants or contracts, and research assistants are appointed to further these and other ongoing research efforts. Current Institute activities include research on such topics as migration patterns, political socialization, human utilization, instructional technology, et al. IBR also presently serves as an "umbrella" for two other enterprises: The Survey Research Center and The Research Center in Crime and Delinquency.

Physically, the Institute is housed in the Boyd Graduate Studies Research Center, with ready access to the University Computer Center, a technical library, and related facilities.

The Institute does not confer degrees; however, students interested in the Institute's activities may correspond with the graduate coordinator of any department collaborating

with the Institute or with the Director, Institute for Behavioral Research, University of Georgia, Athens, Georgia 30602.

Institute of Higher Education

The Institute of Higher Education is a service agency of The University of Georgia and works closely with other educational agencies and institutions in a variety of cooperative programs dealing with planning, development, and evaluation. The Institute is involved in many activities related to the overall development of higher education in the State of Georgia and the Southern Region. Staff members participate in statewide and regional studies of institutional goals, program development, instructional improvement, and the professional development of administrators and faculty members. One important function of the Institute is assisting smaller, developing institutions in projects related to the improvement of administrative, faculty, and student services. Another function includes cooperation with the Graduate School in assisting faculty members of Georgia colleges who desire to continue their graduate education and to improve their teaching skills. As part of its efforts to publicize and critique conceptual and operational trends in higher education, the Institute conducts numerous workshops, seminars, and conferences on the campuses of other institutions. Closely related to all Institute activities is a doctoral program specifically designed to study the problems and issues of higher education. Inquiries concerning Institute activities should be addressed to the director.

Institute of Natural Resources

The Institute of Natural Resources conducts and manages interdisciplinary research,

academic and educational programs related to natural resources. The research, training, and advisory efforts are focused on the integrative applications of the biological, physical, and social sciences to the development, management, utilization, and conservation of natural resources, especially land, water, minerals, fisheries, wildlife, and energy. The focus of the Institute faculty is on synthesizing scientific research for analysis of complex natural resources policy and management issues. The Institute provides graduate research assistantships for studies related to these fields.

Libraries

The University of Georgia Libraries are composed of three major libraries on the UGA campus (Main, Science, and Law), plus a series of small collections such as the Georgia Center for Continuing Education Library, the veterinary medicine reading room, and various lab collections. The UGA Libraries' system also includes libraries at the experiment stations in Griffin, Tifton, and Skidaway.

The UGA Library is the largest university library in the State of Georgia and is a member of the prestigious Association of Research Libraries, consisting of the largest 117 research libraries in North America.

The libraries contain over 2,000,000 books, serials and documents, and many other items including manuscripts, photographs, drawings, and maps. The collections support the curricular and research needs of the campus and are available to library users both on the campus and across the state.

GENERAL DEGREES

MASTER OF ARTS (MA) and MASTER OF SCIENCE (MS)

Master of Arts.

The Master of Arts degree will be conferred upon candidates who have met the requirements for this degree with major study in one of the following fields: anthropology, art history, business administration, classics, comparative literature, drama, economics, education, English, French, geography, German, Greek, history, journalism, Latin, linguistics, mathematics, mathematics non-thesis, music, philosophy, political science, religion, Romance languages, sociology, Spanish, and speech communication.

Master of Science.

The Master of Science degree will be conferred upon candidates who have met prescribed requirements, with major study in one of the following fields: agricultural economics; agricultural engineering; agronomy; anatomy (veterinary); animal science; biochemistry; botany; chemistry; child and family development; clothing, textiles, interiors and furnishings; dairy science; entomology; food science; foods and nutrition; forest resources; geology; horticulture; housing, home management and consumer economics; medical microbiology; microbiology; molecular and population genetics; pharmacology (veterinary); pharmacy; physics; physiology (veterinary); plant pathology; poultry science; psychology; statistics; veterinary parasitology; veterinary pathology; and zoology.

Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for the Master of Arts or Master of Science degree upon recommendation of the major department and approval of the Dean of the Graduate School.

2. *Residence.* The minimum residence requirement is one academic year (three quarters of full-time study).

3. *Time Limit.* All requirements for the degree must be completed within six years beginning with the first registration for graduate courses on the program of study. Extension of time may be granted only for conditions beyond the control of the individual.

4. *Program of Study.* A student must complete a program of study which constitutes a logical whole. The courses listed in this program must carry at least 40 quarter hours of graduate credit, exclusive of thesis, and at least one-third of this credit must be in University of Georgia courses open only to graduate students.

The program of study must be submitted on the proper form with approval by the student's major professor, the departmental graduate coordinator, and the Dean of the Graduate School. This step should be completed during the student's second quarter of residence and must be done before the student is admitted to candidacy for a degree.

5. *Foreign Language Requirement.* Upon the option of the student's major department, a reading knowledge of a modern foreign language may be required of candidates for the Master of Arts and Master of Science degrees. A prospective student should request information concerning the language requirement from the departmental graduate coordinator if the requirement is not described under the departmental heading in this bulletin. The languages approved by some departments are: English, French, German, Greek, Italian, Portuguese, Russian, and Spanish. The department and the major professor, however, must approve the language proposed by the prospective candidate. Students may not elect to use their mother tongue to satisfy a reading knowledge requirement.

A reading knowledge of each language required may be satisfied by passing a reading examination prepared by the Educational Testing Service or by earning a grade of B or higher in a University of Georgia language reading course at the 104 level or above (equivalent to a fourth-quarter course). The Graduate School Foreign Language Test may be taken a maximum of three times in any one language. (See section 4 of the statement of policies relating to the Doctor of Philosophy degree for information concerning administration of Graduate School Foreign Language Tests.)

A student whose mother tongue is not English may be permitted to use this language to satisfy a foreign language requirement. To accomplish this, the department and the major professor must recommend to the Dean of the Graduate School that English be considered as a foreign language and present evidence of the student's proficiency in the language. To be effective, this recommendation must be approved by the Dean of the Graduate School.

6. *Acceptance of Credit by Transfer.* If graduate credit earned at an accredited institution constitutes a logical part of the student's program, transfer of credit may be allowed when recommended by the student's major professor and graduate coordinator, and when approved by the Dean of the Graduate School. Such transfer of credit cannot exceed ten quarter hours. No grade below B may be transferred. The courses to be transferred may not have been used in a degree program at another institution. Transfer grades are not used in calculating cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the time the student plans to graduate and within the time limit of the degree.

7. *Admission to Candidacy.* It is the responsibility of the student to see that an application for admission to candidacy is filed with the Dean of the Graduate School by Friday of the first full week of classes of the quarter in which the courses on the program of study are completed. This application is a certification by the student's major department that the student has demonstrated the ability to do acceptable graduate work in his/her field and that:

- (1) all prerequisites set as a condition to admission have been satisfactorily completed;
- (2) foreign language requirements have been met;

- (3) the program of study has been approved by the major professor, the graduate coordinator, and the Dean of the Graduate School; and
- (4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the program of study).

8. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

9. *Thesis.* A candidate must submit a thesis which shows independent judgment in developing a problem from primary sources. (In the Department of Mathematics, the thesis requirement may be replaced by 15 quarter hours of graduate work in 800 level courses.) The thesis shall be written under the direction of the student's major professor, who may be an appointed member of the graduate faculty or a faculty member approved by the department head. The thesis must be approved by the major professor and submitted to the graduate coordinator for transmission to a reading committee. The reading committee consists of two faculty members appointed by the graduate coordinator and the major professor. The major professor may not serve on this committee.

The thesis, signed by the major professor and the chairman of the reading committee, must be submitted to the Dean of the Graduate School for his approval no later than two weeks prior to graduation.

A candidate must register for at least five quarter hours of thesis under the course number 930. Instructions for typing the thesis may be obtained in the Graduate School.

10. *Final Examination.* The candidate must pass a final oral examination covering course work and the thesis. The final oral examination is administered by the candidate's major professor, as chairman, and members of the reading committee.

11. *Binding the Thesis.* Three copies of the thesis must be deposited with the University Library for binding. Each copy must carry a certificate of approval signed by the major professor, the chairman of the reading committee, and the Dean of the Graduate School.

12. *Final Clearance.* All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation.

DOCTOR OF PHILOSOPHY (PhD)

The University established this degree for the purpose of providing properly qualified students with the opportunity to pursue research and other scholarly activities beyond the point that is possible in programs for the master's degree. At present, opportunity for such advanced graduate work is provided in agricultural economics, agronomy, animal nutrition, animal and dairy science, anthropology, art, biochemistry, botany, business administration, chemistry, child and family development, comparative literature, counseling and student personnel services, drama, ecology, economics, education of exceptional children, educational psychology, English, entomology, food science, foods and nutrition, forest resources, geography, geology, history, horticulture, linguistics, mass communication, mathematics, medical microbiology, microbiology, molecular and population genetics, pharmacology (veterinary), pharmacy, philosophy, physical education, physics, physiology (veterinary), plant pathology, political science, poultry science, psychology, reading education, Romance languages, sociology, statistics, parasitology (veterinary), pathology (veterinary), and zoology.

This degree will be granted in recognition of proficiency in research, breadth and soundness of scholarship, and thorough acquaintance with a specific field of knowledge, not upon completion of any definite amount of work prescribed in advance. Evidence of such attainment must be provided through the presentation of an acceptable dissertation based upon independent research and the passing of such written and oral examinations as may be prescribed.

Departments that have been approved to offer the Doctor of Philosophy degree may implement this degree program by the adoption of appropriate rules and regulations; departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for the Doctor of Philosophy degree upon certification by the major department that he/she is a person of proper attainment and promise, that appropriate courses may be adequately given, and that the student's research can be adequately supported and directed. Such admission must

be to an authorized field and must be approved by the Dean of the Graduate School.

2. *Residence.* The granting of this degree presupposes a minimum of three full years of study beyond the bachelor's degree. At least three consecutive quarters of full-time work must be spent in resident study on this campus.

3. *Time Limit.* All requirements for this degree, except the dissertation and final oral examination, must be completed within a period of six years. This time requirement dates from the first registration for graduate courses on a student's program of study.

A candidate for the doctoral degree who fails to complete all degree requirements within five years after passing the comprehensive examinations, and being admitted to candidacy, will be required to take the comprehensive examinations again and be admitted to candidacy a second time.*

4. *Research Skills Requirements* (including the Foreign Language Requirement). In order to deal effectively with the material needed for pursuing research, the student must develop a facility with certain research skills or "tools" such as foreign languages, statistics, or computer science. At the option of the student's major department, one or more skills may be required of candidates for the Doctor of Philosophy degree. A prospective student should request information concerning research skills requirements from the departmental graduate coordinator if a requirement is not described under the departmental heading in this bulletin. The rest of this section concerns only the foreign language requirement.

The languages approved by some departments are: English, French, German, Greek, Italian, Portuguese, Russian, and Spanish. The graduate coordinator and the major professor must, however, approve the language proposed by the prospective candidate. Students may not elect to use their mother tongue to satisfy a reading knowledge requirement.

The requirement of a reading knowledge of a foreign language may be satisfied by one of the following methods:

- (1) Earning a grade of B (3.0) or higher in a University of Georgia reading course at the 104 level or above (equivalent to a fourth-quarter course).
- (2) Passing a Graduate School Foreign Language Test prepared by the Educational Testing Service. This examination may be

*When a candidate for a doctoral degree, who was admitted to candidacy prior to September, 1973, is readmitted to the Graduate School, he/she will have five years from the date of first readmission to complete all degree requirements.

taken a maximum of three times in any one language. A thirty-day period must intervene between test dates.

- (3) A student whose mother tongue is not English may be permitted to use English to satisfy a foreign language requirement. To accomplish this, the graduate coordinator and the major professor must recommend to the Dean of the Graduate School that English be considered as a foreign language and must present evidence of the student's proficiency in the language. To be effective, this recommendation must be approved by the Dean of the Graduate School.

Graduate School Foreign Language Tests in French, German, Russian, and Spanish are administered on an individual basis at any time between 8:00 a.m. and 2:30 p.m. Monday through Friday by the Counseling and Testing Center. Students are not required to preregister. The test fee is \$10. The tests will be scored and the results reported to the Graduate School by the Center. Scores on the GSFLT taken elsewhere may be submitted for consideration. No other language tests are acceptable.

If a student wishes to offer a language other than French, German, Russian, or Spanish, and it is acceptable to the major professor and to the graduate coordinator, inquiry should be made to determine if examining authorities are available on this campus. If so, the student's major professor should request approval from the Dean of the Graduate School to offer the language in lieu of the four above. Arrangements for the examination will be made after the Dean's approval is given. The result of this examination will be reported to the Graduate School by letter from the examiner.

5. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

6. *Advisory Committee.* Before the end of the first year of residence of a prospective candidate for the Doctor of Philosophy degree, the Dean of the Graduate School shall appoint an advisory committee for the student. The committee will consist of a major professor, as chairman, and four additional members. The major professor and at least two of the other members of the committee must be appointed members of the graduate faculty. The committee will be recommended to the Dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, arranging the comprehensive written and oral examinations, approving a subject for the dissertation, approving the completed dissertation, and approving the student's defense of his/her research. The committee should advise the student of required research skills and other requirements.

Departmental recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the graduate faculty of that department.

7. *Programs of Study.* A preliminary program of study, developed by the major professor and the doctoral student and approved by a majority of the advisory committee, will be submitted to the graduate coordinator by the end of the student's first year of residence. The program of study should constitute a logical whole.

A final program of study will be submitted to the Graduate School prior to application for admission to candidacy. This program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the Dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program (including courses from the master's degree and courses transferred from other universities), and not just courses satisfying the minimum degree requirement.

Each department should evaluate carefully and fully each doctoral student's progress and qualifications at the end of the first year of study in order to advise the student whether or not to continue in the program.

8. *Comprehensive Examinations.* A student must pass formal, comprehensive written and oral examinations before being admitted to candidacy for the degree. These examinations are administered by the student's advisory committee.

The written comprehensive examination, although administered by the advisory committee, may be prepared, and/or graded according to the procedures and policies in effect in the student's department. The oral comprehensive examination will be an inclusive examination within the student's field of study. An examination of the student's dissertation prospectus may precede or follow

the oral comprehensive examination but may not take the place of the oral comprehensive examination.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of this examination at least two weeks before the date of the examination. This notice must be in writing.

Following each examination, written and oral, each member of the advisory committee will cast a written vote of "pass" or "fail" on the examination. At least four out of a possible five positive votes are required to pass each examination. The results of both examinations will be reported to the Graduate School.

9. *Dissertation Planning.* Students pursuing this degree must present a dissertation on some subject connected with their major field of study. The dissertation must represent originality in research, independent thinking, scholarly ability, and technical mastery of a field of study. Its conclusions must be logical, its literary form must be acceptable, and its contribution to knowledge should merit publication.

It is most important that the persons who serve on the advisory committee, at the time the dissertation research is undertaken, be faculty members knowledgeable in the areas of the student's research. They should be selected irrespective of their departmental affiliation. Sometimes it will be appropriate for the membership of the advisory committee to remain unchanged during a student's entire doctoral program, while at other times changes in the original committee will be necessary.

The major professor and advisory committee shall guide the student in planning the dissertation. The student will prepare a dissertation prospectus. When the major professor certifies that the dissertation prospectus is satisfactory, it must be formally considered by the advisory committee in a meeting with the student. This formal consideration may not take the place of the comprehensive oral examination.

Approval of the dissertation prospectus signifies that members of the advisory committee believe that it proposes a satisfactory research study. Approval of the prospectus requires the agreement of at least four of five members of the advisory committee as evidenced by their signing an appropriate form which, together with the approved prospectus, is filed with the graduate coordinator.

10. *Admission to Candidacy.* It is the responsibility of the student to initiate an appli-

cation for admission to candidacy so that it is filed with the Dean of the Graduate School at least three quarters before the date of graduation. This application is a certification by the student's major department that the student has demonstrated ability to do acceptable graduate work in the chosen field of study and that:

- (1) all prerequisites set as a condition to admission have been satisfactorily completed;
- (2) research skills requirements have been met;
- (3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the Dean of the Graduate School;
- (4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed graduate courses on the program of study [no course with a grade below C (2.0) may be placed on the final program of study];
- (5) written and oral comprehensive examinations have been passed and reported to the Graduate School;
- (6) a dissertation prospectus has been approved;
- (7) The advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointment; and
- (8) the residence requirement has been met.

The major professor has the primary responsibility for guiding research, but the student should consult all members of the advisory committee to draw upon their expertise in relevant areas.

After admission to candidacy, students must register for a minimum of five hours of dissertation or other appropriate credit for each of three quarters. They must register for a minimum of five quarter hours in any quarter they use University facilities and/or staff time.

11. *Dissertation Approval and Defense.* When the major professor is satisfied with the completed dissertation, he/she will certify that it has his/her approval and is ready to be read. The major professor will then distribute copies of the dissertation to the remaining members of the advisory committee, and will schedule a final oral defense and notify the Graduate School. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community. The committee members will have three weeks to read and evaluate the completed dissertation.

Written assent of three of the four committee members (other than the major professor)

will be required before a dissertation will be approved as ready for a final defense. If the advisory committee declines to approve the dissertation as ready for the final defense, the major professor will notify the student and the Graduate School.

The defense of the dissertation will be chaired by the student's major professor. Four of the five members of the advisory committee must approve the student's dissertation and defense and must certify their approval in writing. The results of the defense of the dissertation must be reported to the Graduate School at least one week prior to graduation.

12. *Binding the Dissertation.* Three official copies of the dissertation must be filed in the University Library for binding. Each copy must carry a certificate of approval signed by the major professor and the Dean of the Graduate School.

13. *Other Requirements.* Before the degree will be awarded, the student must file a copy of the abstract of the dissertation (not more than 350 words) with the Graduate School and the library. At the same time, the student must submit a receipt showing that he/she has deposited with the treasurer of the University the amount of \$35.00 to cover the cost of microfilming the dissertation. If the student desires to have the dissertation copyrighted, an additional charge of \$20.00 must be paid. This must be presented at the University Library in the form of a certified check or money order made payable to University Microfilms.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. Students must enroll for a minimum of five quarter hours the quarter in which they complete degree requirements.

Interdisciplinary Doctoral Programs

In addition to the doctoral programs which are administered by departments in various colleges, there are two programs administered by interdepartmental committees. The program chairman, the foreign language requirement, and a brief description of each program are presented below.

ANIMAL NUTRITION

W. M. Britton

(Livestock-Poultry Building, South Campus)

A description of this program is shown in the animal nutrition section under course offerings.

ECOLOGY

D.A. Crossley, Jr.

(Biological Sciences Building, South Campus)

Doctoral Language Requirement: A reading knowledge of one foreign language is required of degree candidates.

This interdepartmental program is designed to provide students with training in modern ecology. No required core sequence is specified; students take course work in population, community and systems ecology. Major emphasis in the program of study is on course work related to dissertation research, but students are expected to develop a broad background in ecological science. The student is assisted by an advisory committee and is expected to produce a dissertation which is an original contribution to ecological science. Laboratories at the Institute of Ecology, the Savannah River Ecology Laboratory, and in other sections of the state (mountains, coastal plains, wetlands, lakes and rivers, coast and sea) provide unusual opportunities for ecological training.

Courses listed under a number of departments are available for the ecology degree program. (See listings for biology, botany, entomology, forest resources, geology, microbiology, statistics, and zoology.)

PROFESSIONAL DEGREES

MASTERS DEGREES

General Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for a professional degree upon the recommendation of the major department and approval of the Dean of the Graduate School.

2. *Residence.* The minimum residence requirement for most professional masters' degrees is three quarters, which do not have to be consecutive. See the following program descriptions for specific requirements.

3. *Time Limit.* All requirements for a professional master's degree must be completed within six years beginning with the first registration for courses on the student's program of study. Extension of time may be granted only on conditions beyond the control of the student.

4. *Language Requirement.* All candidates for professional masters' degrees are required to show correctness and good taste in their use of both written and spoken English.

5. *Program of Study.* A program of study should be prepared by the student and the major professor during the student's second quarter in residence. This program must be submitted to the Graduate School on application for admission to candidacy forms and must be approved by the major professor, the graduate coordinator, and the Dean of the Graduate School.

6. *In-Service Credit.* A maximum of 30 hours of graduate in-service course credit may be included in certain programs. Students are responsible for contacting the department in which they are enrolled to ascertain if in-service courses are acceptable on their program of study. (See the following statement concerning a limitation on in-service credit.)

7. *Accepting Credit by Transfer.* If graduate work taken at an accredited institution constitutes a logical part of a student's program of study, transfer of credit may be allowed if recommended by the student's major professor and graduate coordinator, and approved by the Dean of the Graduate School. Such trans-

fer of credit cannot exceed 10 quarter hours and cannot reduce residence requirements. No grade below B may be transferred. The courses to be transferred may not have been used as part of the requirements for another degree. Transfer grades are not used in calculating quarterly and cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the date the student plans to graduate. A combination of in-service and transfer credit may not exceed 30 quarter hours on any program of study.

8. *Admission to Candidacy.* It is the responsibility of the student to see that an application for admission to candidacy is filed with the Dean of the Graduate School by Friday of the first full week of classes of the quarter in which the courses on the program of study are to be completed. This application is a certification by the student's major department that the student has demonstrated the ability to do acceptable graduate work and that normal progress has been made toward earning a degree. The student's major professor and graduate coordinator must certify that the following specific requirements for admission to candidacy have been met:

- (1) all prerequisites set as a condition to admission have been completed;
- (2) the program of study has been approved by the major professor, the graduate coordinator, and the Dean of the Graduate School;
- (3) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the program of study).

9. *Thesis.* If a thesis is required for a professional master's degree, inquiry should be made to the appropriate department concerning procedures to be followed.

10. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken, and on all courses on the program of study.

11. *Final Examination.* The candidate must pass a final examination administered by the

department. If an oral examination is given, it must be administered by a committee of no less than three faculty members. The results of this examination must be reported to the Graduate School by the major professor. This requirement has been waived for degrees offered in the Graduate School of Business Administration.

12. *Final Clearance.* All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation.

PROGRAM DESCRIPTIONS

Master of Accountancy (MAcc)

The J. M. Tull School of Accounting at The University of Georgia offers a professional Master of Accountancy degree (MAcc). Candidates are prepared for careers in financial accounting, public sector accounting, auditing, managerial accounting and controller-ship, information systems, or taxation.

All students must have substantial background in the common body of knowledge foundation of business administration and accounting. If not completed in the five-year program at The University of Georgia or in a baccalaureate program at another institution, the study may be accomplished in foundation graduate and undergraduate courses. Beyond the foundation, the MAcc program requires 46 quarter hours of course work.

First Year.

Foundation: (may be waived by undergraduate work)

MAT 207	Introduction to Calculus for Business
MS 798F	Statistics, Regression and Correlation
MS 799F	Data Processing
BL 798F	Legal and Social Environment of Business
ECN 797F	Fundamentals of Economic Analysis
MAN 798F	Production/Operations Management
MAN 799F	Management and Organizational Behavior
FIN 799F	Financial Principles
MKT 799F	Seminar in Marketing
ACC 110	Principles of Accounting I
ACC 111	Principles of Accounting II
ACC 500	Intermediate Accounting I
ACC 501	Intermediate Accounting II
ACC 502	Intermediate Accounting III

Plus , and managerial skills training:

ACC 511	Income Taxation
ACC 540	Income Taxation
ACC 520	Auditing
ACC 530	Systems

Second year*

ACC 871	Professional Accounting
ACC 872	Accounting Policy
	Accounting electives
	Non-accounting electives (800 or 900 level courses)
	Business Administration**

*At least 33 of the 46 hours must be in 800 or 900 level courses.

**Suggested choices: MS 800 and additional exposure to the field of statistics.

The applicant's transcript will be reviewed to determine whether the educational background includes the content of the MAcc foundation courses. Generally three categories of students are observable in this foundation analysis: those with a bachelor's degree in business administration with a major in accounting (BBA-ACC); those with a bachelor's degree in business administration with a major other than accounting (BBA-Non-ACC); those with a bachelor's degree in a subject other than business administration (BA). For the BBA-ACC student the MAcc foundation courses will normally have been satisfied; then the 46 hours for the second year will meet the MAcc degree requirements. For the BBA-NON-ACC student, part of the MAcc foundation courses will normally have been satisfied; then 30 hours of undergraduate accounting courses beyond principles of accounting and 46 hours of the second year will meet the MAcc degree requirements. For the BA student normally none of the MAcc foundation courses will have been satisfied, then a 107 hour program will satisfy the MAcc degree requirement since the student will take ACC 799F in lieu of ACC 110 and 111 and 25 hours instead of 30 hours of undergraduate accounting courses beyond principles of accounting.

Master of Accountancy (MAcc) (emphasis on taxation)

This option is designed for the student who desires specialized training in taxation as preparation for a career in public accounting, private accounting, or government. The last twelve of the twenty hours of accounting electives required for the Master of Accountancy degree must be in the area of taxation.

Master of Agricultural Extension (MAExt)

This degree is designed especially for cooperative extension workers. In addition to general Graduate School requirements, a baccalaureate degree appropriate to one's work and one year of field experience in cooperative extension, or its equivalent, is desired before a prospective candidate may begin the program. Candidates must complete an approved program of 60 quarter hours of graduate work.

No thesis is required. However, under proper supervision and as a part of a scheduled graduate course (AET 921), a written problem will be required with its content related to needs within the field of Agricultural Extension.

Master of Applied Mathematical Science (MAMS)

The Master of Applied Mathematical Science is a terminal degree program designed for students who seek a broad training in applied quantitative methods as preparation for professional employment in business, government, or industry. For such students, this program will provide a structure that blends various applied mathematical sciences with particular reference to their application to real-world problems.

The program of study includes 55 quarter credit hours of graduate courses. In lieu of a thesis, students in the program are required to prepare one or two technical reports, either as part of a regular course or in a special seminar. The preparation of the technical report(s) will provide the student with an opportunity to apply the tools of the mathematical sciences to one or several problems of interest, by developing appropriate models, obtaining needed data, and analyzing the results for their decision implications. The technical report must be filed with the Graduate School.

Three distinct options are available to accommodate students with different career goals. The student may apply for study in

applied mathematics in the Department of Mathematics, management science in the Quantitative Business Analysis Department of the College of Business Administration, or computer science/statistical analysis in the Department of Statistics and Computer Science. All candidates for the degree, regardless of the option chosen, must have as prerequisites for admission one year of calculus, a course in linear algebra, and familiarity with a programming language. Additional prerequisites are required for some options. If the student has not completed all prerequisites, he or she must complete them early in the program. Courses taken to meet prerequisites may be graduate or undergraduate courses, but may not be applied to the program of study for the degree.

Master of Art Education (MAEd)

The Master of Art Education degree is designed for art teachers and supervisors of art with course work in curriculum, instructional methodology and educational research along with theoretical, historical and psychological foundations of art in education. Students may select courses in studio, art history, art or expressive therapy, aesthetics and criticism as part of their program. Students select Plan A consisting of 11 courses, 55 quarter hours, including an applied project, or Plan B of 12 courses, 60 quarter hours, with submission of approved papers on related topics. Prerequisite for admission is a bachelor's degree in art or art education. (See MED degree description for details).

Master of Arts for Teachers (MAT)

The Master of Arts for Teachers program is designed to prepare teachers for employment in secondary schools and junior colleges. The degree may be earned in English, French, German, Romance languages, and Spanish. There is no thesis or language requirement.

In general, admission requirements for programs leading to the Master of Arts for Teachers degree are the same as admission requirements for programs leading to the Master of Arts degree. Applicants should contact the department in which they plan to enroll for information concerning admission to specific programs. In addition to departmental admission requirements, all applicants for the MAT program must hold a baccalaureate degree from an accredited college or university, with an undergraduate major of at least 35 quarter hours in the appropriate field of study and be able to satisfy all require-

ments for the professional fourth-year teaching certificate issued by the State of Georgia for the subject area in which they plan to major. Individuals who cannot satisfy the certification requirement, but meet all other admission criteria, may be admitted as unclassified postgraduate students.

Each student will be required to meet the following program requirements before being granted the MAT degree:

- (1) complete 40 hours of graduate course work in the subject area, with approval of the student's academic department;
- (2) complete 15 quarter hours of graduate course work in education and related fields, with approval of the appropriate department in the College of Education;
- (3) pass a final comprehensive examination covering course work and a reading list; and
- (4) receive training in methods of research in the appropriate subject field.

Master of Avian Medicine (MAM)

This degree is designed to provide veterinarians with specialized training in the diagnosis, treatment and prevention of poultry diseases. The degree is open to students who hold the Doctor of Veterinary Medicine degree.

Candidates for this degree must complete for credit an approved program of 55 quarter hours of graduate work, including 38 hours from a series of core courses and 17 hours from a selected group of electives. To complete requirements, the candidate must stand for an oral examination before the faculty of the department of Avian Medicine. No thesis or foreign language is required.

Master of Business Administration (MBA)

Applicants with baccalaureate degrees in any field of study are eligible to apply to the MBA program. The MBA degree requires two years of study for those students without undergraduate preparation in business administration. The two-year curriculum consists of 96 quarter hours, of which 32 quarter hours of course work may be waived in the first year for students entering with AACSB accredited BBA degrees. All students must have completed at least one quarter of calculus prior to matriculation.

The first year of the two-year curriculum consists of 50 quarter hours of required course work. These courses provide the student with the basic analytical tools as well as the func-

tional and managerial skills necessary to deal with today's business problems. This background provides the student with a basic understanding of organizations and the role of managers in these organizations.

The program's second year consists of 44 quarter hours of electives plus a required policy course to help students comprehend the strategy and integrated operations of a total enterprise. Six of the electives are required to cover two areas of specialization, called sequences. These sequences may be selected by the student to provide areas of specialized expertise. Each department in the College of Business Administration provides three-course sequences which can be selected by the student. The remaining electives may be used to specialize in a third sequence or strengthen an existing concentration.

Two-Year Curriculum

First-Year Courses

Fall Quarter: (17 hours in the following subject areas)

Principles of Accounting
Applied Statistical Methods
Business Economics
Data Processing
Information Systems
Communications

Winter Quarter: (17 hours in the following subject areas)

Accounting and Information Systems
Organizational Behavior
Survey of Operations Research
Economics
Finance
Communications

Spring Quarter: (16 hours in the following subject areas)

Finance
Strategic Marketing
The Design of Productive Systems
Social, Political and Legal Environment
Ethics

Second Year Courses

Fall Quarter:

	Hours
Sequence 1 elective	4
Sequence 2 elective	4
Free elective	4
Free elective	4
	—
	16

Winter Quarter:

Sequence 1 elective	4
Sequence 2 elective	4
Free elective	4
Business Policy	4
	—
	16

Spring Quarter:

Sequence 1 elective	4
Sequence 2 elective	4
Free elective	4
Free elective	4
	—
	16

Four-Quarter Curriculum

The four-quarter MBA program is designed to meet the needs of superior students with an undergraduate degree in business. Entering students must have fulfilled a calculus requirement before they matriculate.

Summer Quarter:

	Hours
*Course 1	4
*Course 2	4
*Course 3	4
Ethics	2
Communication	2
	—
	16

*Incoming BBAs will generally take three of the six courses listed below. Selected courses will depend on the weaknesses in their undergraduate programs. The courses listed here are those which are most generally absent from other BBA programs. They include: Production, Legal, Operations Research, Managerial Accounting, Economics, and Statistics.

Fall/Winter/Spring Quarters: Same as second year of **Two-Year Program**

Note: The Graduate School of Business Administration requires applicants to submit information in addition to that required by the Graduate School. Applicants should contact the Graduate School of Business Administration.

Master of Education (MED)

This degree is designed for the student whose vocational objectives require preparation for teaching, supervision, counseling, and/or first line administration in grades K-12, junior colleges, and other educational and/or helping

agencies. Students who contemplate becoming candidates for this degree should contact the appropriate division or department in the College of Education as to the program to be followed. This degree may be attained through either of the two following plans of work:

PLAN A.

The requirements for the degree of Master of Education may be met by the completion of an approved program of 11 graduate courses (55 quarter hours). Under this plan, the following two courses must be included in the student's program; a research course and 765-*Applied Project in Education*.

PLAN B.

Under this option, the requirements for the Master of Education degree may be met by 60 quarter hours of approved graduate course work. A research course must be included in the student's program.

Master of Fine Arts (MFA)

The requirements for this degree are satisfactory completion of an approved program of 50 quarter hours of graduate course work and a creative project or problem to be designated as 921, which will carry five hours credit.

In *art*, emphasis will be placed upon a high degree of technical and artistic accomplishment. The student must also have a general knowledge of art history and criticism.

In *drama*, emphasis will be placed not only upon a high degree of technical and artistic accomplishment but also on a general knowledge of relevant history and literature. The program calls for 75 quarter hours, with concentrations in acting, directing, design, and dramatic writing.

The prerequisite for a program in art and drama is the Bachelor of Fine Arts, or its equivalent.

Master of Forest Resources (MFR)

A professional program designed to be a terminal degree program for forest resources managers, the Master of Forest Resources presumes a Bachelor of Science in Forest Resources degree or the equivalent. The minimum requirement for the degree of Master of Forest Resources is an approved program carrying 55 quarter hours of graduate credit. Twenty hours must be in forest resources and so selected as to form a logical major. Twenty hours of additional credit must be earned in forest resources or a closely related field. The

remaining fifteen hours must be taken outside the field of forest resources. No thesis is required.

Master of Historic Preservation (MHP)

Consistent with the multi-disciplinary nature of historic preservation, persons with baccalaureate degrees in architecture, landscape architecture, urban planning or design, interior design, art history, social history, law, archaeology, real estate, economics, or related disciplines are eligible to apply to the MHP program. The MHP program is designed to prepare students for a wide range of careers in the conservation and management of historic resources in both the built and natural environments. The 90 quarter hour course of study is structured to develop versatile, competent, and highly motivated professionals who can perceive preservation opportunities in the broadest sense and who can develop strategies ensuring the protection and use of cultural resources as a part of the fabric of urban and rural environments. The MHP program will provide students from diverse academic backgrounds a common concept of preservation philosophy and process through an intensive, community-oriented, practical educational experience which effects a balance between academic and professional training.

Master of Home Economics (MHE)

The Bachelor of Science in Home Economics, or equivalent degree, is the prerequisite for this program. The minimum requirement for the degree of Master of Home Economics is an approved program of 11 graduate courses (55 quarter hours) with three quarters of resident study. At least four courses must be taken in a selected field in home economics. These must include Home Economics 921 (five hours), *Problems in Home Economics*, on which an acceptable written report must be presented. In the departments of clothing, textiles, interiors and furnishings; foods and nutrition; and housing, home management and consumer economics, at least two courses in the student's program must be from fields other than home economics.

Master of Landscape Architecture (MLA)

The School of Environmental Design accepts students with undergraduate degrees from a variety of disciplines. Those without a bachelor's degree in landscape architecture,

architecture or a related profession may be required to take up to 60 quarter hours of prerequisite courses. The requirement for this degree is an approved program of at least 65 quarter hours of graduate course work and an acceptable thesis. Thesis registration must be for a minimum of 10 quarter hours. Candidates enrolled in the Georgia Institute of Technology-University of Georgia joint program in city planning and landscape architecture will require an approved program of at least 45 quarter hours of course work and an acceptable thesis.

Master of Laws (LLM)

The Master of Laws program is designed for those students who seek an opportunity for a more thorough study of certain areas of the law than is possible within the limitations of the three-year *Juris Doctor* (J.D.) program. The graduate law program combines intensive supervised work in a single subject with an opportunity to take courses in related fields subject to Graduate Studies Committee approval as part of the student's program of study.

A minimum of two semesters of resident study is required, with a total of 27 semester hours of credit. At least 12 hours must be in courses, 8 hours must be for independent study and thesis research, and the cumulative average for all graded work must be 3.0 or above. In addition, each LLM candidate must prepare a thesis in publishable form that deals with a legal topic approved by the Graduate Studies Committee.

A student who wishes to pursue the Master of Laws degree must hold an A.B. degree or equivalent from an approved college and a J.D. degree or equivalent from a law school which is a member of the Association of American Law Schools or is approved by the American Bar Association. In addition, the student's record of legal studies must display high scholarly aptitude, and the data required in the LLM application form must reflect a well conceived plan of specialized study and research.

Graduate students from non-English speaking countries must hold a degree from a recognized law school in a foreign country, with an academic record and study program acceptable to this faculty and possess proficiency in English as demonstrated on the Test of English as a Foreign Language (TOEFL).

For additional information, write the School of Law for a copy of the Law School Bulletin.

Master of Marketing Research (MMR)

This degree program is designed to develop marketing research professionals and thereby satisfy the needs of business for research professionals. The program of study includes 55 quarter hours of graduate work including two quarters of internship and begins each Fall Quarter. Students without prior business courses must complete foundation courses before entering the program. No thesis is required.

A Board of Advisors composed of the nation's leading marketing researchers work closely with faculty on program evaluation, instruction, and funding. Marketing Research Fellowships provide a tax-free stipend of \$4,200 for each student. Admission is very selective.

Master of Music (MM)

This degree offers major concentrations in performance, woodwinds, composition, and music literature. Each concentration requires an approved program with a minimum of 50 quarter hours of graduate course work and a five-credit hour final project. The final project is satisfied by a solo recital which indicates graduate quality, a large original composition, or by an approved research project.

Master of Music Education (MMEd)

This degree offers a concentration in music education or music therapy. Completion of the program leads to the MMEd degree and Georgia teacher certification in music at the T-5 level. Those who complete the degree program with a concentration in music therapy and complete a six-month internship in music therapy are also academically qualified to become registered music therapists.

This degree may be obtained through either of two plans. Under either plan, A or B, an oral comprehensive examination must be passed during the final quarter of work.

PLAN A

The requirement for this degree may be met by completion of an approved program of study of 50 graduate hours in music, education, and music education, plus five quarter hours in applied problems in music. This program must include at least 40 quarter hours outside the field of education. A research course and other courses required by the department must be included in the student's program.

PLAN B

Under this option, the requirements may be met by completion of an approved program of 60 quarter hours of graduate course work. These courses must include 40 quarter hours outside the field of education. A research course and other courses required by the department must be included in the program.

Master of Plant Protection and Pest Management (MPPPM)

The Master of Plant Protection and Pest Management program is designed to produce graduates with comprehensive, multidisciplinary training in plant pathology, entomology, and weed science for employment by industrial, extension, or regulatory agencies.

Applicants for the Master of Plant Protection and Pest Management program must hold the baccalaureate degree from an accredited college or university. Basic admission requirements are essentially the same as those required for admission to Master of Science programs in each of the four university divisions cooperating to offer the program. Students who satisfy all basic admission requirements, but whose background in pertinent biological and agricultural sciences is inadequate, must enroll for selected undergraduate courses as a means of removing deficiencies. Inquiries concerning specific admission requirements and procedures should be addressed to: Coordinator of M.P.P.P.M. Program, Department of Plant Pathology, Plant Sciences Building, University of Georgia, Athens, Georgia 30602.

A total of 62 quarter hours of graduate course work will be required to complete the program. Students will complete two internships. Usually, the first will come near the midpoint of the program, and the second will be the final course requirement. In some instances, a six-month internship will be recommended by the student's advisory committee. There is no thesis or language requirement. Each candidate for the degree must pass final written and oral examinations.

Master of Public Administration (MPA)

A baccalaureate degree is the prerequisite for this program. The program requires 60 quarter hours of graduate course work in government, business administration and other specialties, including the computer sciences. A six-month internship in an agency of local, state, or federal government also is normally required.

In addition, the student must pass a comprehensive written examination in four fields of public administration.

Master of Social Work (MSW)

A program of the School of Social Work, this graduate professional degree is awarded after successful completion of at least five academic quarters. The course work is divided between both on-campus and field instruction. Research is emphasized through the evaluation of practice. The program of study requires a minimum of 60 quarter hours of graduate credit.

In addition to meeting the general admission requirements of the Graduate School, applicants to the School of Social Work must demonstrate sufficient maturity, self-awareness, objectivity, and interpersonal competence. An admission interview with on-campus or field faculty is a desired preadmission procedure.

SPECIALIST IN EDUCATION (EdS)

The Specialist in Education degree is a self-contained degree program intermediate between the master's degree and the doctor's degree both in time and depth. It provides advanced study for those preparing for positions which call for a higher level of competence and specialization than that of the master's degree but without the heavy emphasis on research of the doctor's degree.

The degree is offered in the following fields: administration in special education, adult education, agricultural education, art education, business education, counseling and student personnel services, curriculum and instruction, distributive education, early childhood education, educational administration, educational media, educational psychology, elementary education, emotionally disturbed children, English education, foreign language education, guidance and counseling, home economics education, industrial arts education, learning disorders, library education, mathematics education, mental retardation, middle school education, music education, physical education, reading education, recreation and leisure studies, rehabilitation counseling, safety education, school psychology, school social services education, science education, social science education, speech education, speech pathology, student personnel in higher education,

supervision, trade and industrial education, and vocational education.

Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for the Specialist in Education degree upon recommendation of the appropriate department/division in the College of Education, and approval of the Dean of the Graduate School.

2. *Time Limit.* All requirements for the Specialist in Education degree must be completed within six years, beginning with the first registration for courses on the student's program of study. Extension of time may be granted only on conditions beyond the control of the student.

3. *Program of Study.* A program of study should be prepared by the student and the major professor during the first quarter in residence. The program for the degree shall consist of a minimum of 45 quarter hours of study at the graduate level beyond the master's degree. The program shall be planned as a logically organized whole, in light of the student's record in previous undergraduate and graduate courses, performance on standardized and non-standardized examinations, and the entire professional experience. The program of study, approved by the major professor and the graduate coordinator, is submitted to the Graduate School when the student applies for admission to candidacy. For course work taken after January 1, 1977, to be eligible for inclusion in a program of study it must have been taken after the student was admitted as a prospective candidate for the Specialist in Education degree.

4. *Language Requirement.* All candidates for graduate degrees are required to show correctness and good taste in their use of both written and spoken English.

5. *Accepting Credit by Transfer.* If graduate work earned at an accredited institution constitutes a logical part of the student's program, transfer credit may be allowed if recommended by the student's major professor, the graduate coordinator, and approved by the Dean of the Graduate School. Such transfer of credit cannot exceed ten quarter hours and cannot reduce the residence requirement to less than 25 hours. The courses to be transferred may not have been used as part of the requirements for another degree. No grade below B (3.0) may be transferred. Transfer grades are not used in calculating quarterly and cumulative averages. All requests for

transfer credit, with accompanying official transcripts must be in the Graduate School at least 30 days prior to the time the student plans to graduate and within the time limit of the degree.

6. *In-Service Credit.* A maximum of 20 hours of graduate in-service credit may be included in a program of study for the degree. This maximum will be reduced by any credit transferred from another institution.

7. *Admission to Candidacy.* On the completion of four or five courses, it is the responsibility of the student to see that an application for admission to candidacy is filed with the Graduate School. This application is a certification by the student's major department that the student has demonstrated the ability to do acceptable graduate work in the chosen field and has made normal progress toward the degree. The specific requirements for admission to candidacy are listed below:

- (1) all prerequisites set as a condition to admission have been completed;
- (2) the program of study has been approved by the major professor, the graduate coordinator, and the Dean of the Graduate School; and
- (3) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the program of study).

8. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

9. *Final Clearance.* All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation.

DOCTOR OF EDUCATION (EdD)

This degree provides advanced professional training for careers in teaching, administration, and other educational services. The degree is offered in the following fields of education: adult education, art education, business education, counseling and student personnel services, curriculum and instruction, early childhood education, education of exceptional children, education of gifted, educational administration, educational measurements, educational philosophy, educational psychology, elementary education, geographic education, higher education, language education, mathematics education, music

education, physical education, reading education, recreation and leisure studies, research design, school psychology, science education, social science education, sociology education, speech pathology, supervision, teacher education, and vocational education. Specialization in research training and in subject fields appropriate to elementary, secondary, and college teaching is provided.

Departments that have been approved to offer the Doctor of Education degree may implement this degree program by the adoption of appropriate rules and regulations; departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

Requirements

1. *Admission.* Applicants who desire to pursue advanced professional training in education beyond the master's degree, with a view to becoming candidates for the Doctor of Education degree, will be expected to file formal application and present themselves to the faculty of the appropriate department/division in the College of Education for special tests and interviews. Recommendation on admission will be made by the department only after its screening procedures have been carried out. Admission will be upon the recommendation of the graduate coordinator, or an authorized representative, and approval of the Dean of the Graduate School.

2. *Residence.* The degree presupposes a minimum of three full years of study beyond the bachelor's degree, and it cannot be secured through summer work alone. At least three consecutive quarters must be spent in full-time resident study on the campus of The University of Georgia, one of which may be a summer quarter.

3. *Time Limit.* All requirements for this degree, except the dissertation and final oral examination, must be completed within a period of six years. This time requirement begins with the first registration for graduate courses on the student's program of study.

A candidate for the Doctor of Education degree who fails to complete all degree requirements within five years after passing the comprehensive examinations and being admitted to candidacy will be required to take the comprehensive examinations again and be admitted to candidacy a second time.*

*When a candidate for a doctoral degree, who was admitted to candidacy prior to September, 1973, is readmitted to the Graduate School, he/she will have five years from the date of first readmission to complete all degree requirements.

4. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

5. *Advisory Committee.* Before the end of the first year of residence of a prospective candidate for the Doctor of Education degree, the Dean of the Graduate School shall appoint an advisory committee for the student. The committee will consist of a major professor, as chairman, and four additional members. The major professor and at least two of the other members of the committee must be appointed members of the graduate faculty. The committee will be recommended to the Dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, arranging the comprehensive written and oral examinations, approving a subject for the dissertation, approving the completed dissertation, and approving the student's defense of his/her research. The committee should advise the student of required research skills and other requirements.

Departmental recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the graduate faculty of that department.

6. *Programs of Study.* A preliminary program of study based on a minimum of 120 quarter hours of course work beyond the baccalaureate degree, excluding dissertation credit, will be submitted to the graduate coordinator by the end of the student's first year of residence. The program of study must be developed by the major professor and the doctoral student and approved by a majority of the advisory committee. The program of study should constitute a logical whole and be significantly related to the student's vocational objectives. A minimum of forty-five credit hours of course work, exclusive of dissertation credit, must be taken at The University of Georgia at the doctoral level; i.e., sixty total credit hours must be taken at The University of Georgia.

A final program of study will be submitted to the Graduate School prior to application for admission to candidacy. This program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the Dean of the

Graduate School. The final program of study must show all graduate courses relevant to the doctoral program (including courses from the master's degree and courses transferred from other universities), and not just courses satisfying the minimum degree requirement.

Each department should evaluate carefully and fully each doctoral student's progress and qualifications at the end of each year of study in order to advise the student whether or not to continue in the program.

7. *Comprehensive Examinations.* A student must pass formal, comprehensive written and oral examinations before being admitted to candidacy for the degree. These examinations are administered by the student's advisory committee.

The written comprehensive examination, although administered by the advisory committee, may be prepared, and/or graded according to the procedures and policies in effect in the student's department. The oral comprehensive examination will be an inclusive examination within the student's field of study. An examination of the student's dissertation prospectus may precede or follow the oral comprehensive examination but may not take the place of the oral comprehensive examination.

The oral comprehensive examination is open to all members of the faculty and students and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of this examination at least two weeks before the date of the examination.

Following each examination, written and oral, each member of the advisory committee will cast a written vote of "pass" or "fail" on the examination. At least four out of a possible five positive votes are required to pass each examination. The results of both examinations will be reported to the Graduate School.

8. *Dissertation Planning.* The dissertation, being the most important single requirement for the Doctor of Education degree, should demonstrate the intelligent application of appropriate research procedures to the investigation of a problem in educational theory or practice. The dissertation problem must be conducted on some subject related to the student's major field of study and demonstrate evidence of scholarly ability and thorough evaluation of relevant source materials. Its conclusions must be logical, its literary form must be acceptable, and its contribution to educational theory or practice should be substantial.

It is most important that the persons who serve on the advisory committee, at the time the dissertation research is undertaken, be faculty members knowledgeable in the areas of the student's research. They should be selected irrespective of their departmental affiliation. It is usually appropriate for the membership of the advisory committee to remain unchanged during a student's entire doctoral program. However, if changes in the original committee are necessary, all parties are to be notified.

The major professor and advisory committee shall guide the student in planning the dissertation. The student will prepare a dissertation prospectus. When the major professor certifies that the dissertation prospectus is satisfactory, it must be formally considered by the advisory committee in a meeting with the student. This formal consideration may not take the place of the comprehensive oral examination.

Approval of the dissertation prospectus signifies that members of the advisory committee believe that it proposes a satisfactory research study. Approval of the prospectus requires the agreement of at least four of five members of the advisory committee as evidenced by their signing an appropriate form which, together with the approved prospectus, is filed with the graduate coordinator.

9. Admission to Candidacy. It is the responsibility of the student to initiate an application for admission to candidacy so that it is filed with the Dean of the Graduate School at least three quarters before the date of graduation. This application is a certification by the student's major department that the student has demonstrated ability to do acceptable graduate work in the chosen field of study and that:

- (1) all prerequisites set as a condition to admission have been satisfactorily completed;
- (2) research skills requirements have been met;
- (3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the Dean of the Graduate School;
- (4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study [no course with a grade below C (2.0) may be placed on the final program of study];
- (5) written and oral comprehensive examinations have been passed and reported to the Graduate School;

- (6) a dissertation prospectus has been approved;
- (7) the advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointment; and
- (8) the residence requirement has been met.

The major professor has the primary responsibility for guiding research, but the student should consult all members of the advisory committee to draw upon their expertise in relevant areas.

After admission to candidacy, students must register for a minimum of five hours of dissertation or other appropriate credit for each of three quarters. They must register for a minimum of five quarter hours in any quarter they use University facilities and/or staff time.

10. Dissertation Approval and Defense. When the major professor is satisfied with the completed dissertation, he/she will certify that it has his/her approval and is ready to be read. The major professor will then distribute copies of the dissertation to the remaining members of the advisory committee, and will schedule a final oral defense and notify the Graduate School. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community. The committee members will have three weeks to read and evaluate the completed dissertation.

Written assent of three of the four committee members (other than the major professor) will be required before a dissertation will be approved as ready for a final defense. If the advisory committee declines to approve the dissertation as ready for the final defense, the major professor will notify the student and the Graduate School.

The defense of the dissertation will be chaired by the student's major professor. It is open to all members of the University community. Four of the five members of the advisory committee must approve the student's dissertation and defense and must certify their approval in writing. The results of the defense of the dissertation must be reported to the Graduate School at least one week prior to graduation.

11. Binding the Dissertation. Three official copies of the dissertation must be filed in the University Library for binding. Each copy must carry a certificate of approval signed by the major professor and the Dean of the Graduate School.

12. Other Requirements. Before the degree

will be awarded, the student must file a copy of the abstract of the dissertation (not more than 350 words) with the Graduate School and the library. At the same time, the student must submit a receipt showing that he/she has deposited with the treasurer of the University the amount of \$35.00 to cover the cost of microfilming the dissertation. If the student desires to have the dissertation copyrighted, an additional charge of \$20.00 must be paid. This must be presented at the University Library in the form of a certified check or money order made payable to University Microfilms.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. Students must enroll for at least five hours of credit in the quarter in which graduation requirements are completed.

Cooperative Doctoral Programs

The University cooperates with Valdosta State College to offer the Doctor of Education degree in Elementary Education and with Georgia Southern College and West Georgia College to offer the Doctor of Education degree in Educational Administration and Curriculum and Supervision. For information concerning these programs, please contact the Director of Graduate Admissions, University of Georgia, Athens, Georgia 30602.

DOCTOR OF MUSICAL ARTS (DMA)

The program of study leading to the degree Doctor of Musical Arts provides advanced professional, academic, and research preparation for music careers in teaching, performing, composing, and conducting. Major concentrations are offered in music education, performance, composition, and choral conducting. The School of Music should be contacted regarding applied music options available within the performance area.

Requirements

1. *Admission.* In addition to meeting the general requirements for graduate admission to the University, applicants must present evidence of potential for significant scholarly, artistic, and professional attainment in their intended major area of concentration. Such potential is normally documented through an assessment of the student's academic and professional background and standing; an

audition; a portfolio review of musical compositions and performances; letters of recommendation; an interview; and other standard admission review procedures as appropriate to the intended major field of concentration. A recommendation for admission to the program from the School of Music must be approved by the Dean of the Graduate School.

2. *Diagnostic Examinations.* Diagnostic examinations are administered prior to or during the initial term of enrollment. Information concerning the diagnostic examinations is available from the Office of Graduate Studies, School of Music.

3. *Residence.* The granting of this degree presupposes a minimum of three full years of study beyond the bachelor's degree. At least three consecutive quarters of full-time work must be spent in resident study on the campus of The University of Georgia.

4. *Time Limit.* All requirements for the degree except the dissertation or document¹ and final oral examination must be completed within a period of six years. This time requirement dates from the first enrollment for graduate course work applicable to the student's official program of study.

A candidate who fails to complete all degree requirements within five years after passing the comprehensive examinations and being admitted to candidacy will be required to take the comprehensive examinations again and re-establish degree candidacy.

5. *Research Skills Requirements.* The program of study requires research competencies appropriate to the elected major and minor fields of concentration. Research skills requirements will vary but may include such areas as statistics, computer science, music bibliography, diction, and foreign languages.

Students electing voice performance as the major field of concentration are required to demonstrate a reading knowledge of two foreign languages selected from Italian, German, or French. Students electing majors in either voice performance or choral conducting must demonstrate competence in German, French, and Italian diction and pronunciation. For all other students, research skills are specified by the advisory committee as appropriate to the major or secondary field of concentration. Undergraduate course credit earned in the completion of language or other research skills requirements is not applicable to the minimum number of hours necessary for the awarding of the degree. Information concerning methods of satisfying research skills requirements may be obtained from the

¹See item number 10

Office of Graduate Studies, School of Music.

6. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

7. *Advisory Committee.* The graduate coordinator of the School of Music serves as program advisor and recommends an advisory committee to be appointed by the Dean of the Graduate School during the student's first year of enrollment. The major professor, program advisor, and three faculty members representing the second field of concentration and the areas of music history/literature and music theory comprise the membership of the advisory committee.

The advisory committee, in consultation with the student, is charged with planning the student's program of study, specifying research skills requirements, arranging for and administering the comprehensive examinations, approving the topic for the document or dissertation, approving and evaluating recital requirements, and approving the student's defense of his/her research.

Recommendations for advisory committee membership, and replacements should vacancies occur, must meet with the approval of the Graduate Studies Committee of the School of Music and the Dean of the Graduate School.

8. *Program of Study.* The program of study involves the completion of course work in five areas: major field; minor field; music history/literature and theory; music in higher education; and research/special requirements. A preliminary program of study is normally developed during the first year of residence. The program must be approved by a majority of the advisory committee.

A minimum of 140 quarter hours must be completed above the baccalaureate degree. Minimum credit hour requirements for each area are specified by the School of Music.

A final program of study will be submitted to the Graduate School prior to application for admission to candidacy. The program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the Dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program including courses from the master's degree, courses transferred from other universities, and those courses taken in residence

stipulated as satisfying minimum degree requirements within the stated matriculation areas.

9. *Comprehensive Examinations.* The comprehensive examinations are designed to evaluate the student's ability to assimilate and integrate knowledge, apply historical and theoretical concepts, demonstrate skills, and draw conclusions. They cover doctoral course work completed in meeting the requirements of each cognate area of study for the degree, graduate work completed at the master's level, and general musical knowledge acquired through independent study, research, and professional experience. The examinations, consisting of written and oral segments, may include a practicum, and are normally scheduled at or near the completion of course work. Upon successful completion of the comprehensive examinations, the student is eligible to make formal application for admission to candidacy for the degree. The advisory committee prepares, administers, and evaluates the comprehensive examinations. The graduate coordinator reports the outcome to the Dean of the Graduate School. At least four out of a possible five affirmative votes are required to pass both the written and oral examinations. Successful completion of the written examination is a prerequisite for scheduling the oral comprehensive examination.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of the oral examination at least two weeks prior to its administration.

An examination of the student's dissertation or document prospectus may precede or follow the oral examination but may not take the place of the oral examination.

10. *Dissertation/Document.* Candidates electing music education as the major field of concentration must present a dissertation representing originality of research, independent thinking, scholarly ability, and technical mastery of the chosen topic of study. Candidates in performance, choral conducting, and composition are required to present a written document which in conjunction with required recitals is submitted in fulfillment of dissertation requirements. The document is more limited in scope than the dissertation though comparable in scholarship and its contribution to existing knowledge in the field.

The dissertation or document must demon-

strate originality and scholarship, its conclusions must be quantified, its literary form consistent with normal standards for scholarly writing, and its contribution to knowledge should merit publication. Candidates whose major field of concentration is composition or conducting may elect a dissertation with the consent of the advisory committee. When composition is the major field, the dissertation or document normally will include one or more major original musical works. Scores as well as an accompanying analytical essay are required.

11. *Recitals.* A minimum of three public recitals is required for students whose major concentration is performance. Majors with a concentration in composition are required to present two public recitals. Four recital performances are required of majors with a concentration in choral conducting and literature.

The programs for all recitals and performances must be approved two months in advance by the major professor and advisory committee. When a lecture-recital is to be given, and outline of the lecture must accompany the program proposal.

The first full recital must be presented prior to scheduling the written comprehensive examination; the last recital may not be scheduled until the oral comprehensive examination has been satisfactorily completed and degree candidacy established.

Recital projects presented in partial fulfillment of degree requirements will be evaluated by the full membership of the advisory committee. The committee will notify the major professor if the recital presentation is approved. Should the committee decline approval, the major professor and the Dean of the Graduate School are so notified. The graduate coordinator of the School of Music, or an approved designate, will be responsible for coordinating the evaluation of recital project presentations.

12. *Dissertation/Document Planning and Approval.* The student is responsible for the development of a proposal for the dissertation or document. The proposal is developed with guidance provided by the major professor or designated chairman of the advisory committee. The advisory committee is to be consulted on a regular basis during the period of proposal development. Approval of the prospectus requires the agreement of at least four of five members of the advisory committee as evidenced by their signing an approval sheet attached to the final draft of the prospectus. This action signifies that members of the advisory committee believe that the prospectus

proposes a satisfactory research study. A copy of the approved prospectus is filed with the graduate coordinator.

13. *Admission to Candidacy.* It is the responsibility of the student to initiate an application for admission to candidacy so that it is filed with the Dean of the Graduate School at least three quarters before the date of graduation. This application is a certification by the School of Music that the student has demonstrated ability to do acceptable graduate work in the major concentration and that:

- (1) all prerequisites set as a condition to admission have been satisfactorily completed;
- (2) research skills requirements have been met;
- (3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the Dean of the Graduate School;
- (4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed graduate courses on the program of study (no course with a grade below C (2.0) may be placed on the final program of study);
- (5) written and oral comprehensive examinations have been passed and reported to the Graduate School;
- (6) a dissertation or document prospectus has been approved;
- (7) the advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointment; and
- (8) the residence requirement has been met.

The major professor has the primary responsibility for guiding research but the student should consult all members of the advisory committee to draw upon their expertise in relevant areas.

After admission to candidacy, students must register for a minimum of five hours of dissertation or research credit for each of three quarters. They must register for a minimum of five quarter hours of credit in any quarter they use University facilities and/or staff time.

14. *Dissertation Approval and Defense.* When the major professor is satisfied with the completed dissertation or document, he/she will certify that it has his/her approval and is ready to be read. The major professor will then distribute copies of the manuscript to the remaining members of the advisory committee, schedule a final oral defense, and notify the Dean of the Graduate School. Subsequently, the Graduate School will announce

the time and place of the defense of the dissertation or document to the University community. The committee members will have three weeks to read and evaluate the completed manuscript.

Written assent of three of the four committee members (other than the major professor) will be required before a dissertation or document will be approved as ready for a final defense. If the advisory committee declines to approve the dissertation or document as ready for the final defense, the major professor will notify the student and the Dean of the Graduate School.

The defense of the dissertation or document will be chaired by the student's major professor. Four of the five members of the advisory committee must approve the student's dissertation or document and defense and must certify their approval in writing. The results of the defense of the dissertation or document must be reported to the Graduate School at least one week prior to graduation.

15. *Binding the Dissertation/Document.* Three official copies of the dissertation or document must be filed in the University Library for binding. Each copy must carry a certificate of approval signed by the major professor and the Dean of the Graduate School.

16. *Other Requirements.* Before the degree will be awarded, the student must file a copy of the abstract of the dissertation or document (not more than 350 words) with the Graduate School and the library. At the same time, the student must submit a receipt showing that he/she has deposited with the treasurer of the University the amount of \$35 to cover the cost of microfilming the dissertation. If the student desires to have the dissertation or document copyrighted, an additional charge of \$20 must be paid. This must be presented at the University Library in the form of a certified check or money order made payable to University Microfilms.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. Students must be registered for a minimum of five quarter hours of credit the quarter in which they complete all degree requirements.

17. *Application for Graduation.* An application for graduation must be filed with the Registrar's Office no later than Friday of the first full week of classes two quarters prior to the anticipated graduation date. A fee of \$25 must accompany the application. Application forms may be obtained from the Graduate School or Registrar's Office.

DOCTOR OF PUBLIC ADMINISTRATION (DPA)

The objective of the program is to provide doctoral level training for several client groups. First, the program will prepare students to serve in executive or upper managerial levels in local, state, and federal jurisdictions. Second, the program will prepare students for a variety of institutional settings that have significant interfaces with public agencies. These include various institutes, private planning agencies, and consulting organizations. Third, the program will help prepare individuals for specialized research and teaching careers.

The department may implement this degree program by the adoption of appropriate rules and regulations; departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

Requirements

1. *Admission.* Applicants may be admitted as prospective candidates for the Doctor of Public Administration degree upon certification by their major department that they are persons of proper attainment and promise and that the appropriate courses can be adequately given and required research adequately supported and directed. Such admission must be approved by the Dean of the Graduate School.

2. *Residence.* The granting of this degree presupposes a minimum of three full years of study beyond the bachelor's degree. At least three consecutive quarters of full-time work must be spent in resident study on this campus. If the student holds an assistantship or has other part-time duties, the residence requirement will be increased to provide the equivalent of three consecutive quarters of full-time study.

3. *Time Limit.* All requirements for the degree, except the dissertation and final oral examination, must be completed within a period of six years. This time requirement dates from the first registration for graduate courses on the program of study.

A candidate for the Doctor of Public Administration degree who fails to complete all degree requirements within five years after passing the comprehensive examinations and being admitted to candidacy will be required to take the comprehensive examinations again and be admitted to candidacy a second time.*

*When a candidate for a doctoral degree, who was admitted to candidacy prior to September, 1973, is readmitted to the Graduate School, he/she will have five years from the date of first readmission to complete all degree requirements.

4. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

5. *Advisory Committee.* Before the end of the first year of residence of a prospective candidate for the Doctor of Public Administration degree, the Dean of the Graduate School shall appoint an advisory committee for the student. The committee will consist of a major professor, as chairman, and four additional members. The major professor and at least two of the other members of the committee must be appointed members of the graduate faculty. The committee will be recommended to the Dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, arranging the comprehensive written and oral examinations, approving a subject for the dissertation, approving the completed dissertation, and approving the student's defense of his/her research. The committee should advise the student of required research skills and other requirements.

The department's recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the graduate faculty of the department.

6. *Programs of Study.* A preliminary program of study developed by the major professor and the doctoral student and approved by a majority of the advisory committee, will be submitted to the graduate coordinator by the end of the student's first year of residence. The program of study should constitute a logical whole.

A final program of study will be submitted to the Graduate School prior to application for admission to candidacy. This program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the Dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program (including courses from the master's degree and courses transferred from other universities), and not just courses satisfying the minimum degree requirement.

The department should evaluate carefully and fully each doctoral student's progress and

qualifications at the end of the first year of study in order to advise the student whether or not to continue in the program.

7. *Comprehensive Examinations.* A student must pass formal, comprehensive written and oral examinations before being admitted to candidacy for the degree. These examinations are administered by the student's advisory committee.

The written comprehensive examination, although administered by the advisory committee, may be prepared, and/or graded according to the procedures and policies in effect in the student's department. The oral comprehensive examination will be an inclusive examination within the student's fields of study. An examination of the student's dissertation prospectus may precede or follow the oral comprehensive examination but may not take the place of the oral comprehensive examination.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of this examination at least two weeks before the date of the examination.

Following each examination, written and oral, each member of the advisory committee will cast a written vote of "pass" or "fail" on the examination. At least four out of a possible five positive votes are required to pass each examination. The results of both examinations will be reported to the Graduate School.

8. *Dissertation Planning.* Students pursuing this degree must present a dissertation on some subject connected with their major field of study. The dissertation must represent originality in research, independent thinking, scholarly ability, and technical mastery of a field of study. Its conclusions must be logical, its literary form must be acceptable, and its contribution to knowledge should merit publication.

It is most important that the persons who serve on the advisory committee, at the time the dissertation research is undertaken, be faculty members knowledgeable in the areas of the student's research. They should be selected irrespective of their departmental affiliation. Sometimes it will be appropriate for the membership of the advisory committee to remain unchanged during a student's entire doctoral program, while at other times changes in the original committee will be necessary.

The major professor and advisory committee shall guide the student in planning the dissertation. The student will prepare a dissertation prospectus. When the major professor certifies that the dissertation prospectus is satisfactory, it must be formally considered by the advisory committee in a meeting with the student.

Approval of the dissertation prospectus signifies that members of the advisory committee believe that it proposes a satisfactory research study. Approval of the prospectus requires the agreement of at least four of five members of the advisory committee as evidenced by their signing an appropriate form which, together with the approved prospectus, is filed with the graduate coordinator.

9. *Admission to Candidacy.* It is the responsibility of the student to initiate an application for admission to candidacy so that it is filed with the Dean of the Graduate School at least three quarters before the date of graduation. This application is a certification by the student's major department that the student has demonstrated ability to do acceptable graduate work in the chosen field of study and that:

- (1) all prerequisites set as a condition to admission have been satisfactorily completed;
- (2) research skills requirements have been met;
- (3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the Dean of the Graduate School;
- (4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C (2.0) may be placed on the final program of study);
- (5) written and oral comprehensive examinations have been passed and reported to the Graduate School;
- (6) a dissertation prospectus has been approved;
- (7) the advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointments; and
- (8) the residence requirement has been met.

The major professor has the primary responsibility for guiding research, but the student should consult all members of the advisory committee to draw upon their expertise in relevant areas.

After admission to candidacy, students must register for a minimum of five hours of

dissertation or other appropriate credit for each of three quarters. They must register for a minimum of five quarter hours in any quarter they use University facilities and/or staff time.

10. *Dissertation Approval and Defense.* When the major professor is satisfied with the completed dissertation, he/she will certify that it has his/her approval and is ready to be read. The major professor will then distribute copies of the dissertation to the remaining members of the advisory committee, and will schedule a final oral defense and notify the Graduate School. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community. The committee members will have three weeks to read and evaluate the completed dissertation.

Written assent of three of the four committee members (other than the major professor) will be required before a dissertation will be approved as-ready for a final defense. If the advisory committee declines to approve the dissertation as ready for the final defense, the major professor will notify the student and the Graduate School.

The defense of the dissertation will be chaired by the student's major professor. Four of the five members of the advisory committee must approve the student's dissertation and defense and must certify their approval in writing. The results of the defense of the dissertation must be reported to the Graduate School at least one week prior to graduation.

11. *Binding the Dissertation.* Three official copies of the dissertation must be filed in the University Library for binding. Each copy must carry a certificate of approval signed by the major professor and the Dean of the Graduate School.

12. *Other Requirements.* Before the degree will be awarded, the student must file a copy of the abstract of the dissertation (not more than 350 words) with the Graduate School and the library. At the same time, the student must submit a receipt showing that he/she has deposited with the treasurer of the university the amount of \$35.00 to cover the cost of microfilming the dissertation. If the student desires to have the dissertation copyrighted, an additional charge of \$20.00 must be paid. This must be presented at the University Library in the form of a certified check or money order made payable to University Microfilms.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. Students must enroll for at least five

hours of credit in the quarter in which graduation requirements are completed.

Certificate Programs

Teacher Certification

The University of Georgia offers graduate programs leading to teacher certification at the master's, specialist, and doctoral levels in some 40 different teaching, administrative, supervisory, and school service fields.

The degrees Master of Education and Master of Arts (Education) include both teaching and professional courses for fifth-year certification. Students who complete a Master of Arts degree may meet certification requirements by taking professional courses in education.

General information concerning programs and procedures relating to graduate teacher certification may be obtained from the Office of Instruction, College of Education.

Environmental Ethics

The University of Georgia has a Faculty of Environmental Ethics; an Environmental Ethics Conference Program at the Georgia Center for Continuing Education; a Certificate Program at the graduate level; a journal, *Environmental Ethics*; and a variety of courses devoted partially or entirely to issues of values and the environment.

The Environmental Ethics Program at the Georgia Center for Continuing Education: This program provides leadership for noncredit activities relating to environmental ethics and environmental affairs, including research and curricula development through conferences, workshops, and institutes, and serves as a major resource for numerous educational, community, environmental, business, and governmental leaders. Persons interested in these activities should contact Dr. Eugene C. Hargrove, Environmental Ethics Specialist for the Georgia Center, (404) 542-7818 or 542-6875.

Environmental Ethics: An Interdisciplinary Journal Dedicated to the Philosophical Aspects of Environmental Problems. This widely indexed and refereed journal is intended as a forum for diverse interests and attitudes, and seeks to bring together the nonprofessional environmental philosophy tradition with the newly emerging professional interest in the subject. The editor of *Environmental Ethics* is Dr. Eugene C. Hargrove.

The Certificate in Environmental Ethics: This Certificate is awarded to graduate

students meeting the following requirements: The completion of at least 30 hours of graduate work, including at least 25 hours of graduate course work in approved courses along with an approved research paper in environmental ethics designated for at least 5 hours of graduate credit. All candidates are required to take the following courses: "Environmental Ethics," "Technology and Values," and "Ecology," as a common "core," and to participate in some field work, internship, or other practical experience.

Other courses may be chosen by the student, with the approval of his or her advisor and the Executive Committee of the Faculty of Environmental Ethics, from a list provided according to his or her individual interest and career objectives, with the provision that no more than a total of 15 hours of course work for credit toward the Certificate may be applied from any one academic field. Work on the Certificate in Environmental Ethics may be undertaken by any graduate student at the University. Courses or faculty contributing to the Certificate are found in the following academic areas: agricultural economics, agronomy, art, botany, chemistry, ecology, environmental design, forestry, geography, landscape architecture, law, philosophy, science education, social science education, and zoology.

To be admitted to the Certificate Program, the student must be admitted to the University as a prospective candidate for a graduate degree, a professional degree, or as a nondegree candidate (as defined in the General Regulations of the Graduate School Bulletin), and then make application to the Chair of the Faculty of Environmental Ethics. The nondegree candidate status applies to the person who already holds a master's or doctor's degree from an accredited institution and who wishes to take graduate courses without becoming a candidate for a degree. All prospective recipients of the Certificate in Environmental Ethics should be admitted to a school or college of the University and be assigned an advisor. The student and his or her advisor can then plan the program of study that will be a part of the student's application for acceptance into the Environmental Ethics Program. The current chair of the Faculty of Environmental Ethics is Dr. John T. Granrose of the Department of Philosophy, (404) 542-2823.

Gerontology

The University of Georgia has a Faculty of Gerontology, a Gerontology Center, a Gerontology Program at the Georgia Center for Continuing Education, a Certification Program at the graduate level, and some 40 courses devoted partially or entirely to aging.

Faculty of Gerontology: The University-wide Faculty of Gerontology is charged with the responsibility of developing a program of instruction, service, and research in the processes of aging, biological and behavioral sciences, and application of knowledge to practice. It is comprised of approximately 60 members in 12 units of the University.

Gerontology Center: The major purpose of the Gerontology Center is to coordinate and promote activities relating to aging throughout the University. It has the responsibility of monitoring the gerontology curriculum, a certification program at the graduate level, and library holdings; and of serving as a catalyst in securing grants. Two funded projects focusing upon service learning with the elderly, one sponsored by the National Council on the Aging and the other by the University Year of Action, are administered through the Center.

Gerontology Program of the Georgia Center for Continuing Education: The Gerontology Program of the Georgia Center for Continuing Education provides leadership for non-credit activities relating to the elderly, including workshops, in-service training, film festivals, production of films and tapes, and serves as a major resource for numerous community, organizational and governmental leaders. Persons interested in these aspects of gerontology should call Ms. Marietta Suhart, Program Specialist in Gerontology, Georgia Center for Continuing Education (542-1272).

Gerontology Certificate: The University awards a Certificate in Gerontology to graduate students meeting certain requirements. These include the completion of at least 25 quarter hours of graduate course work in aging along with five hours of field experience or five hours of research. All candidates are required to take GNT 600, a five-hour interdisciplinary seminar in aging. Other courses may be chosen by the student according to his/her individual interest or career objectives with the provision that a total of at least 15 hours of course work be in courses directly related to gerontology and the remaining hours from designated courses having components related to the field of aging. To assure the interdisciplinary nature of the program, students may apply no more than 10 quarter

hours of credit toward certification requirements in any one academic department.

Work on the Certificate in Gerontology may be undertaken by any graduate student at the University. Courses that may be applied toward the Certificate are found in the following academic units: adult education; counseling education; foods and nutrition; home economics education; housing, home management and consumer economics; management; music; pharmacy; psychology; recreation education; social work; sociology; and veterinary medicine.

To be admitted to the certification program, the student must be admitted to a department of the University at the graduate level—either as a prospective candidate for a graduate degree or as a nondegree candidate—and then make application to the chairman of the Faculty of Gerontology. The nondegree candidate status applies to the person who meets requirements for admission to the Graduate School but who wishes to take graduate courses without becoming a candidate for a degree. The prospective recipient of the Certificate in Gerontology should be admitted to a department of the University and be assigned an advisor. The student and his/her advisor can then plan the program of study that will be a part of the student's application for acceptance into the gerontology program.

Courses that may be applied to the Certificate in Gerontology:

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| GNT 600. | Seminar in Aging. (This course is required of all students who wish to earn the Certificate.) 5 hours. |
| GNT 639. | Service Learning with the Elderly. 5 hours. |
| EAD 607. | Survey of Gerontology. 5 hours. |
| CFD 650. | Second Half of Life. 5 hours. |
| FDN 700. | Nutrition Related to the Human Life Cycle. 5 hours. |
| FDN 859. | Nutritional—Metabolic Parameters of Gerontology. 5 hours. |
| HMC 650. | Second Half of Life. 5 hours. |
| HMC 661. | Aged as Consumers. 5 hours. |
| HMC 681. | Housing for the Aged. 5 hours. |
| PSY 606. | Psychology of Aging. 5 hours. |
| PSY 889B. | Seminar in Developmental Psychology: Sensation and Perception in the Aged. 5 hours. |

REC 738.	Recreation for the Aging. 5 hours.
SW 720E.	Social Work with the Aged. 3-5 hours.
SW 721E.	Social Work with the Aged: Public Policy and Regulations. 5 hours.
SW 722E.	Social Work with the Aged: Issues. 5 hours.
SOC 665.	Sociology of Aging. 5 hours.
SOC 666.	Aging and Modernization: Cross Cultural Studies. 5 hours.
VPH 660.	Physiology of Aging. 3 hours.

In addition, the student may make two selections from an approved listing of courses related to gerontology.

For further information concerning the Faculty of Gerontology, the Gerontology Center or the Certification Program, call Dr. James E. Montgomery, Chairman of the Faculty of Gerontology and Director of the Gerontology Center (542-3954).

Global Policy Studies

The University of Georgia has a Center for Global Policy Studies which offers a Certificate in Global Policy Studies at the graduate level.

The Center for Global Policy Studies explores and develops interdisciplinary and interprofessional programs of instruction, research, and service on a wide range of global issues. It administers undergraduate and graduate certificate programs in global policy studies; sponsors instructional and research-oriented symposia, seminars, lectures, and publications; and serves as a focal point for those interested in foreign languages and international studies both inside and outside the University.

The Certificate Program in Global Policy Studies is designed to provide students with an international perspective as well as specialized, technical knowledge and skills. Graduate students can earn the certificate either as a supplement to a regular degree program or as a substitute for a degree program. The certificate program blends well with disciplines which have traditionally prepared individuals for international service, e.g., business, economics, foreign languages, history, law, and political science. It is also designed for individuals in fields which have not traditionally offered international curricula, such as accounting, agriculture, forestry, journalism, nutrition, and plant sciences.

Most new students enrolled in a degree or professional program will find that they can satisfy the certificate requirements with few, if any, additions to their regular program of study. Many departments offer courses which simultaneously meet both certificate and degree requirements. Nondegree students, especially foreign students who plan only one year of graduate study, will find the certificate program particularly attractive.

Students who enroll with the certificate as their sole objective must also be admitted through the department in which they plan to take the majority of their course work. Certificate students must successfully complete a minimum of 40 quarter hours of course work, 30 hours of which must be taken in residence at The University of Georgia. Students applying to the University who are interested in the certification program should contact the Center for Global Policy Studies for assistance in processing their application.

The requirements for the Certificate include 40 quarter hours of course work, including a 15-hour core sequence, a 15-hour substantive specialty, a 10-hour skill requirement, an internship, and a paper requirement.

The core sequence consists of three courses: (1) a course with global scope in the discipline in which the individual plans to develop his or her substantive specialty, (2) a course in a foreign area or region, such as Africa, Asia, Europe, Latin America, or the Middle East (students who are doing their substantive specialty in a foreign area or region should take this course in a cognate discipline instead), and (3) GPS 600. This course will cover the planning, implementation, and evaluation of policies designed to deal with global problems, especially development.

The substantive specialty is composed of three courses that constitute a coherent area of concentration relevant to Global Policy Studies. Many of these substantive specialties are identified by discipline, issue, or region, such as economics, development, or African affairs.

The professional skill requirement refers to competence in a foreign language or other relevant research or policy skill. Ten hours in a foreign language beyond the 104 level at The University of Georgia or the equivalent as determined by standardized proficiency tests is required.

The internship requirement consists of practical work experience in a student's chosen area. This requirement may be satisfied by an actual internship course or an equivalent field experience.

There is also a requirement for a substantial paper on a global subject. This paper may be a master's thesis, a doctoral dissertation, or a paper suitable for presentation at a professional meeting.

Finally, certificate students must have at least one of these courses in a second or cognate discipline in addition to the interdisciplinary course in global policy analysis. A total of 30 quarter hours of work in this certificate program must be taken at The University of Georgia.

For further information concerning the Certificate Program, write Dr. Martin J. Hillenbrand, Director, The Center for Global Policy Studies, Room 303, Baldwin Hall or call (404) 542-5747.

COURSE OFFERINGS

The courses offered each quarter are listed in the Timetable of Classes. This publication may be obtained from the Registrar's Office, the departmental offices, and deans' offices beginning the first week of the quarter preceding the quarter the student plans to register.

The maximum thesis (930) registration is 15 hours per quarter.

AGRICULTURAL ECONOMICS (AEC)

S. J. Brannen
(Conner Hall)

Graduate study in agricultural economics leading to the MS and PhD degrees provides a wide range of formal courses. Thesis research may be undertaken in any one of the following fields of specialization: (1) agricultural business management; (2) production economics; (3) farm management; (4) agricultural policy; (5) land and water economics; (6) agricultural finance; (7) agricultural prices; (8) agricultural cooperatives; (9) economic development; (10) agricultural marketing; (11) environmental economics; and (12) marine resource economics. No foreign language is required for the doctoral degree.

Thesis research is coordinated with the department's overall research program. Students may select a thesis topic related to the department's current research projects in the Agricultural Experiment Stations or in general research. In addition to Experiment Station facilities available for research, the farms and related business firms of Georgia serve as laboratories for economic analyses. A remote communications terminal facilitates use of the University Computer Center in departmental research.

Financial assistance is available for deserving graduate students. Most of this financial assistance is in the form of departmental research assistantships. In addition, the student may apply for both non-teaching and research assistantships offered through the Graduate School.

600. Cooperative Business Organizations. 5 hours.

Prerequisite: AEC 300 or permission of department.

Economic nature of a cooperative; advantages of pooling business volume; appraising cooperative performance; cooperative, economic and business management principles.

601. Rural Organizations. 5 hours.

Prerequisite: AEC 300 or permission of department.

History of agricultural organizations; study of selected rural agencies and organizations; and a study of the relationship between organizations of rural people and their economic well-being.

602. Advanced Farm Organization and Management. 5 hours.

Prerequisite: AEC 300 or permission of department.

Analysis of economic facts of individual farm plans and formation of economic models which postulate optimum allocation of land, labor and capital as guides for maximum revenue.

603. Marketing Livestock and Livestock Products. 5 hours.

Prerequisite: AEC 300 or permission of department.

An economic study of livestock marketing with emphasis on functions of marketing, prices, regulations, and the institutions that implement the marketing of livestock.

608. Economics of Agricultural Labor Utilization. 5 hours.

Prerequisite: AEC 300 or permission of department.

Concepts, principles and techniques for improving the economic efficiency of work performance in agricultural firms, with emphasis on labor requirements and crew balance; work methods and equipment selection; layout and materials handling; employee selection, training and motivation; and budgetary analysis of alternatives.

621. Production Economics: Theory with Applications. 5 hours.

Prerequisite: AEC 300 or permission of department.

The application of fundamental economic principles in determining efficient adjustments in agricultural resource use consistent with economic growth, and changing technology and economic conditions.

651. Farm Appraisal. 5 hours.

Prerequisite: AEC 300 or permission of department.

An application of the methods of appraisal to farm property. A study of the factors influencing farm land and building values. The relationship of land use, soils, crops, livestock, buildings, and other factors to farm value.

658. Intermediate Economic Principles. 5 hours.

Prerequisite: AEC 300 and permission of department.

The principles of competitive and imperfect markets in the allocation of consumer goods and input factors in the free enterprise economy.

660. Economics of Rural Environmental Quality. 5 hours.

Prerequisite: AEC 300 or permission of department.

An appraisal of efficiency and equity impacts of rural environmental problem solutions in existing social, economic and political structures. An analysis of general concepts and techniques for the evaluation of alternative pollution abatement policies in relation to changing social, economic and political structures.

661. Quantitative Techniques in Agricultural Economics. 5 hours.

Prerequisite: AEC 300 or permission of department.

The application of basic quantitative techniques to agricultural economic theory, emphasizing basic models used in the study of prices, marketing and production.

667. Agricultural Prices. 5 hours.

Prerequisite: AEC 300 or permission of department.

The integrated use of price theory and statistical techniques to analyze the behavior of prices, with special emphasis on the prices of agricultural commodities.

669. Agricultural Finance. 5 hours.

Prerequisite: AEC 300 and ACC 110 or 116, or permission of department.

A study of financial problems of agricultural businesses, including budgetary analysis of financial requirements; financial statements; sources, costs and management of funds; risk reduction.

671. Rural Economic Development and Growth. 5 hours.

Prerequisite: AEC 300 or permission of department.

The relationship of inputs and outputs between agriculture and agricultural businesses; analysis of factors affecting development and economic growth in developing areas.

680. Water Resource Economics. 5 hours.

Prerequisite: AEC 300 or equivalent.

A study of the economic aspects of the use, supply, development and management of water resources with special emphasis on river

basin and project planning, benefit-cost analyses, water demands and multiple-use management of water resources.

687. (FIN) Commodity Markets. 5 hours.

Prerequisite: Permission of department.

Development, functions, and importance of commodity markets, principles and mechanics of trading commodities on future markets. Includes study of speculation, hedging and roles of commission houses, commodity exchanges, clearinghouses. Analysis of technical and fundamental trading theories and use of future contracts as instruments for financing business activities.

702. Management in Agriculture. 5 hours.

Prerequisite: AEC 300 or permission of department.

The study of relevant economic principles; identification and measurements for decision criteria; analysis of managerial alternatives in agricultural firms and their aggregate effects on resource allocation and income.

800. Special Readings in Agricultural Economics. 5 hours.

An in-depth study of the literature, the concepts and analytical tools for production economics, marketing or resource economics. Extensive assignments in the student's area of interest.

808. Agricultural Economic Theories and Programs. 5 hours.

Prerequisite: Three senior division courses in agricultural economics or economics.

Review and analysis of economic theories and principles. Fundamentals of analyzing specific cause and effect of problems in agriculture.

809. Advanced Agricultural Price Analysis.

Prerequisite: AEC 458/658, STA 421/621, or equivalent and permission of department.

Price theory is reconciled with problems of collecting and analyzing price data including sources and methods of collecting data and projecting trends. Linear programming theory, econometric methods, and economic theory are integrated in a comprehensive study of economic model building.

AEC 814. Consumer Demand Theory. 5 hours.

Prerequisite: AEC 458/658, STA 422/622 or equivalent.

A primarily theoretical treatment of consumer demand. Utility theory and its assumptions, consumer behavior theory, and problems of application in agricultural economics are included.

821. Agricultural Programs and Policy. 5 hours.

An analysis of alternative governmental programs and policies as they relate to the solution of specific agricultural problems.

830. Agricultural Economics Research. 5 hours.

Prerequisite: Twenty hours of graduate credit, including AEC 458/658 and STA 421/621 or equivalent.

Methodology, techniques and guidance for individual research in problems of agricultural economics.

840. Agricultural Market Structure and Analysis. 5 hours.

Prerequisite: AEC 458/658 or permission of department.

The role of the market in economic development and evaluation of structure, conduct and performance in the U.S. agribusiness sector. Problems of market coordination and associated policy issues are investigated.

871. Advanced Agricultural Development and Growth. 5 hours.

Prerequisite: AEC 471/671 and ECN 410 or equivalent and permission of department.

Analysis of major economic problems of the agricultural sector of developing countries, and a study of policy instruments which have been used to resolve these problems.

875. Natural Resource and Environmental Economics. 5 hours.

Prerequisite: AEC 458/658 and 460/660 or 480/680 or equivalent and permission of department.

Advanced theoretical and empirical concepts related to management of natural and environmental resources. Major theoretical concepts will provide a basis for examination of efficient production and consumption allocation decisions related to natural resources. Emphasis will center on economic, institutional and legal aspects which prevent private markets from efficiently valuing resources.

930. Thesis. 1-15 hours.

AGRICULTURAL ENGINEERING (AEN)

R. H. Brown

(Driftmier Engineering Center, South Campus)

Graduate study in engineering can be carried out in the area of agricultural engineering. The program leads to the degree Master of Science with a major in agricultural engineering and consists of a minimum of 40 quarter hours in course work plus 10 hours for the thesis. The primary goals are to provide the student with knowledge of new and advanced concepts of engineering analysis and design, to deepen his understanding of the applied physical sciences, to encourage independent scientific investigations, and to develop habits of continuing education.

The principal facilities supporting this advanced study and research are located in the Driftmier Engineering Center. These facilities provide exceptional opportunities for investigations involving or requiring microprocessors, mini-computers, diagnostic instrumentation for animals, instrumented mobile power units, waste management instrumentation, solar collectors and storage systems, wind energy systems, water and air quality instruments, instruments to measure the physical properties of agricultural products, or electrostatic spraying instrumentation.

Students have the opportunity to study in modern laboratories devoted to mechanized harvesting, bioengineering, tillage, airborne particulates and soil dynamics. The possibility of conducting research at the Georgia Experiment Station (at Griffin, Ga.) or Coastal Plain Experiment Station (at Tifton, Ga.) adds significantly to the advantages of graduate study at Georgia.

Assistantships are available for both the regular and the sponsored research programs of the department. An undergraduate degree in agricultural engineering is assumed. Graduates of other undergraduate engineering curricula may require additional background courses.

641. Electrical Systems and Controls. 5 hours.

Three lectures and two 2-hour lab periods.

Prerequisite: AEN 383.

The design of electrical systems for agricultural production and processing applications which involve electrical energy for light, heat, power, control, radiation and measurement with special emphasis on the design and utilization of control systems.

643. Mechanical Harvesting Systems. 5 hours.

Three lectures and two 2-hour lab periods.

Prerequisite: AEN 362, 371.

Case studies of design of existing machinery. Design and selection of machine components and harvesting systems. Application of principles of mechanics and physical properties of materials to mechanical system design.

644. Water Management Systems. 5 hours.

Prerequisite: AEN 325.

An engineering design course utilizing the principles of hydrology, hydraulics, soil mechanics, erosion control, and economics in designing a multiple-use water management system for a rural and/or urban watershed.

645. Countryside Engineering. 5 hours.

The relationship of governmental regulations and regulating agencies to the engineering aspects of land development. The engineering design of land areas, including roadway layout, lot layout, drainage, lighting, water systems, waste systems, and solid waste disposal.

648. Instrumentation for Environmental Quality. 5 hours. Three lectures and two 2-hour lab periods.

A study of the basic principles of operation of instrumentation used to measure physical variables which determine environmental quality. The engineering design and application of measuring systems for airborne particulates, gaseous contaminants, odor and noise will be emphasized.

649. Design of Alternate Energy Systems. 5 hours.

Prerequisite: AEN 356, 374, 383; senior or graduate standing in engineering.

The application of basic engineering sciences to the design of alternate energy systems. Particular emphasis is placed upon solar energy system design and also upon wind, biomass combustion, and low head hydro-electric energy systems. Energy storage and delivery systems will also be considered.

680. Microprocessor Based Control Systems. 5 hours.

Prerequisite: AEN 384.

The necessary background to enable students to design and develop microprocessor based control systems is covered. Coverage of system architecture input/output problems and programming will equip student for system design.

802. Special Topics in Engineering. 5 hours.

Prerequisite: B.S.A.E. degree or equivalent.

Special problems in engineering design, analysis, or synthesis.

803. Bio-Engineering Systems. 5 hours.

Prerequisite: AEN 374.

Engineering principles applied to plant and animal systems and environments, including principles of thermodynamics and kinetics which underlie the function of living cells and organisms.

804. Electrical Engineering in Agriculture. 5 hours.

Prerequisite: AEN 383 or equivalent.

The linear and piecewise analysis of certain electric circuits, machines, and transducers, and the design of electromechanical and electromagnetic systems for processing and evaluating agricultural products.

805. Agricultural Structures Design. 5 hours.

Prerequisite: AEN 355 and 371 or equivalent.

Methods of analysis of indeterminate structures, elastic arches, torsion of non-circular sections and related problems.

806. Advanced Farm Power and Equipment. 5 hours.

Prerequisite: AEN 361 and 362 or equivalent.

Special problems dealing with design, development and testing of agricultural tractors and machines.

807. Irrigation Engineering. 5 hours.

Prerequisite: AEN 325 and 356 or equivalent.

A study of the theory and engineering design principles of sprinkler and trickle systems and system management based on basic plant-soil-water relationships.

809. Industrial Electronics. 5 hours.

Prerequisite: MAT 401/601, AEN 387 or equivalent.

Coverage of basic electronic components and circuits essential in the successful interfacing of transducers of light, moisture, heat, sound, counters, mechanical motion, etc. to research or industrial systems. Emphasis will be on the utilization of system building blocks, i.e., integrated circuits as opposed to circuit construction with discrete components.

813. Research Methods and Instrumentation. 5 hours.

Research problems, design and execution of experiments, and the principle applications and calibration of scientific apparatus and equipment used in research.

814. Similitude in Engineering. 5 hours.

Prerequisite: BSAE degree or equivalent.

Dimensional Analysis, the theory of models and the methods of similitude are applied to the solutions of engineering problems and research. Selected illustrative models and applications are drawn from the agricultural engineering field of specialization.

930. Thesis. 1-15 hours.

ENGINEERING TECHNOLOGY (ET)

703. Functional Planning of Farm Structures and Utilities. 5 hours.

Prerequisite: ET 365 and AEC 301 or equivalent.

Basic problems in planning farm structures for typical agricultural enterprises in the Southeast; development, storage, treatment and distribution of farm water supplies; and the collection and disposal of sewage and farm wastes. (For non-engineering students.)

704. Modern Farm Power and Machinery. 5 hours.

Prerequisite: ET 360 and AEC 301 or equivalent.

Characteristics and principles of farm tractors and power units, both self-propelled and tractor-drawn, and related machinery. Emphases are on selection, operation, care,

maintenance and management. (For non-engineering students.)

705. Soil and Water Conservation. 3 hours. Two hours lecture and one 2-hour lab.

Prerequisite: ET 320 and AEC 301 or equivalent.

Technical aspects of soil and water conservation methods; planning and management of drainage, irrigation and erosion control measures. (For non-engineering students.)

706. Electric Power and Control. 3 hours. Two hours lecture and one 2-hour lab.

Prerequisite: ET 380 and AEC 301 or permission of department.

Principles of selection, installation and maintenance of electric motors, controllers, automatic control systems and electric heating and cooling equipment; electric measurements as evaluation techniques. (For non-engineering students.)

707. Farm Materials Handling. 3 hours. Two hours lecture and one 2-hour lab.

Prerequisite: ET 506/706.

Selection and evaluation of equipment for conveying, grinding, mixing, separating, drying and storing farm products. Emphasis is placed on planning complete materials handling systems. (For non-engineering students.)

708. Special Problems in Agricultural Engineering Technology. 5 hours.

Prerequisite: Three courses in engineering technology and permission of department.

A detailed study of a special area of mechanized agriculture with emphasis on concepts, fundamentals, processes, limitations, and testing of approved problems.

AGRICULTURAL EXTENSION (AET)

James B. Harris
(Lumpkin House, South Campus)

The purpose of the graduate program in agricultural extension is to provide an opportunity for professional Cooperative Extension Service personnel and others to broaden and strengthen their base of technical knowledge and add the dimension of human and social relations that is essential if one is to perform effectively the duties of a general adult/youth educator within the context of the public service function of the University.

The curriculum leading to the Master of Agricultural Extension degree focuses on understanding the Cooperative Extension Service and how it works. Individual programs are built around the candidate's need for additional training in appropriate subject matter, human relations, communications, management, Cooperative Extension Service organization and methods, and informal teaching-learning.

Opportunities for study and research are offered in the Extension Education Department, College of Agriculture, other departments and divisions in the College of Agriculture, College of Home Economics, School of Forest Resources, other schools and colleges in the University and in the Cooperative Extension Service.

Details for entering the Master of Agricultural Extension degree program are found on page 40.

704. Creative Programming for 4-H and Youth. 5 hours.

Prerequisite: AET 313 or equivalent.

History, philosophy and organizational structure of Cooperative Extension 4-H and Youth Education; emphasis upon the needs of youth, teaching, program planning and evaluation methods, the management of human, program and financial resources necessary for 4-H youth work.

705. Communications in Cooperative Extension. 5 hours.

The use of communications media in Cooperative Extension work, with special emphasis on mass communications.

706. Natural Resources Extension: Programming and Applications. 5 hours.

Prerequisite: Graduate standing plus one year of experience in Extension or closely related work, or with permission of department.

This course will introduce students to Extension programs in Natural Resources; planning, implementation and evaluation; principles, procedures and techniques in providing Extension Natural Resources Services; and methods for disseminating educational services to youths and adults.

707. Program Building in Extension. 5 hours.

Prerequisite: Graduate standing plus one year of experience in extension or closely related work.

A study of the basic problems, principles and procedures involved in program development in Cooperative Extension work.

708. Agricultural Extension Administration. 5 hours.

Prerequisite: Graduate standing plus one year of experience in extension or closely related work.

A seminar in the organization, administration, operation, and evaluation of the Cooperative Extension Service and its educational programs.

710. Practicum in Cooperative Extension. 5-10 hours.

Prerequisite: Candidate selection by the Cooperative Extension Service and permission of department.

This course permits selected students to gain experience in leadership roles in the Cooperative Extension Service by working along with current leaders in a learning laboratory situation.

921. Problem Analysis in Cooperative Extension Work. 5 hours.

Prerequisite: Open only to candidates for the MAExt degree.

Functional study of a topic or problem in Cooperative Extension significant to the candidate's area of work.

AGRONOMY (AGY)

W. L. Colville

(Plant Sciences Building, South Campus)

Doctoral language requirement, one foreign language or substitution of 10 hours of course work approved by the advisory committee. Graduate training leading to the MS and PhD degrees is available in all phases of agronomy. In-depth instruction and research are emphasized in both crops and soils. Areas of major specialization in crops are: plant breeding and genetics, physiology, weed control, production and quality, forage utilization, and seed technology. Areas of major specialization in soils are: chemistry, classification, conservation, genesis, fertility, microbiology, mineralogy, plant nutrition and physics. Facilities available for graduate training include: seven agricultural research centers representing soil and climatic areas of the state, three well-equipped state Experiment Stations, and cooperative work is available with federal research laboratories in the fields of soil and water conservation, and agricultural product utilization. Interdepartmental cooperation in related fields is emphasized. Cooperative facilities for data analyses, model building, and system synthesis are available through the Computer Center.

Students with strong backgrounds in biological, geological, physical, chemical, and related sciences are encouraged as prospective candidates for graduate training in agronomy.

604. Plant Breeding. 5 hours. Four lectures and one lab period.

Prerequisite: GEN 358.

Fundamental methods utilized in the science of plant breeding and the important role that breeding plays in crop and tree improvements. (Spring quarter.)

611. Advanced Plant Genetics. 5 hours. Four lectures and one lab period.

Prerequisite: GEN 358.

Recent developments in genetics, significant events, recombinant DNA, somatic hybridization, tissue culture, modification of basic ratios, planning experiments, genetic procedures, male sterility, genetics of disease and

insect resistance, statistical tests, linkage, quantitative and cytoplasmic inheritance, heritability, polyploidy, mutations, apomixis, use of trisomics and translocations, and classic papers. (Winter quarter.)

625. Pasture Development and Management. 5 hours.

Prerequisite: AGY 321 and one other senior division course.

Fundamental principles and theories of establishment and growth; production and utilization of pasture plants; types of pastures; principles of biological adaptation and management for production and conservation. (Winter quarter.)

627. Agronomy Seminar. 1 hour. (Max. 3 hours)

Prerequisite: Two senior division courses in agronomy or allied field.

Seminar in topics related to farm crops and soils. Participation required for credit. Faculty participation encouraged. (Fall, Winter, Spring quarters.)

634. Principles of Chemical Weed Control. 5 hours.

Prerequisite: CHM 261-261L, BOT 380 or equivalent.

A study of weeds and weed control methods in agronomic crops with emphasis on chemical weed control. Herbicides will be discussed with regard to chemical structure, selectivity, mode of action, and dissipation. (Fall and Winter quarters.)

654. Soil Morphology and Classification. 5 hours.

Prerequisite: AGY 305 and one other senior division course in geology, agronomy, chemistry or forestry approved by instructor. Morphological characteristics of soils, factors influencing these characteristics and classification of soils of the U.S. Several full-day field trips will be required at the student's expense. (Total cost about \$35.) (Fall and Spring quarters.)

658. Soil Conservation. 5 hours.

Prerequisite: AGY 201 and 305 or equivalent. A study of soil as a resource, water use and conservation, the soil erosion process, control of erosion and the relationship of soil conservation to conservation of other resources. (Fall quarter.)

659. Soil Fertility. 5 hours.

Prerequisite: AGY 305.

Soil conditions affecting availability of plant nutrients; methods of determining soil fertility and insufficiency of plant nutrients in soils,

and interpretation of chemical and biological measurements as related to fertility maintenance and good soil management. (Fall and Winter quarters.)

660. Soil Physics. 5 hours.

Prerequisite: AGY 305 and one course in physics.

Physical properties, moisture relations and methods of physical analysis of soils. (Winter quarter.)

661. (MIB) Soil Microbiology. 5 hours.

Prerequisite: MIB 350 or equivalent.

A survey of the microorganisms occurring in soil, carbon, nitrogen and mineral cycles, and the effect of microorganisms on soil properties. (Spring quarter.)

662. Wastes and the Soil. 3 hours.

Prerequisite: AGY 305.

A study of the adsorption, transformation and movement of organic and inorganic wastes in soils and some problems in waste disposal. (Winter quarter.)

664. Land Use and Soil Management. 5 hours.

Prerequisite: AGY 305-305L or equivalent.

Physical and chemical properties of soils affecting agricultural and urban land uses; emphasis on the effect of various agronomic management systems on soil productivity and environmental degradation; discussion of current issues, including prime farmland, multiple use, tillage systems, conventional and organic fertilizers, and the conservation ethic.

666. Soil and Plant Analysis. 3 hours.

Prerequisite: AGY 459/659.

Current techniques and methods of interpretation of soil testing and plant analysis. (Winter quarter, alternate years.)

666L. (HOR) Methods for Soil Testing and Plant Analysis. 2 hours.

See HOR 666L.

667. Soil Chemistry. 5 hours.

Prerequisite: AGY 305, CHM 280.

The field of soil chemistry applies and extends the concepts of chemistry and physics in the investigation of problems related to the physical, chemical and biological characteristics of soil and their importance in the management of natural resources. (Winter quarter.)

705. Principles of Field Crop Production. 5 hours.

Effect of environment and heredity on crop production, including light, temperature, moisture, fertility and other factors affecting plant growth and management.

800. Advanced Soil Chemistry. 5 hours.

Prerequisite: CHM 390 or equivalent.

Application of the classical concepts of thermodynamics, colloidal and surface chemistry to soils. Emphasis is placed on interfacial phenomena. Discussion topics include chemical equilibria, ion activities, ion exchange, soil acidity, the theory of electric double layer, molecular adsorption and forces between soil particles. (Spring quarter, alternate years.)

801. Research Methods in Agronomy. 5 hours.

Prerequisite: Two senior division courses in agronomy.

The course is designed to acquaint the student with the history and development of agronomic research. Instruments and techniques available as agronomic research tools will be discussed. Special emphasis will be devoted to specific problems in field, greenhouse, and laboratory investigations in which a research project outline will be prepared, an experiment designed and executed, and the data presented in written form adapted for publication in a professional journal. (Fall quarter.)

810. Advanced Agronomy Seminar. 1 hour.

(Max. 6 hours.)

Topics relating to research in crops and soils, including literature review and results pertaining to local experimental work. Required of all graduate students. (Fall, Winter, Spring quarters.)

812. Specialized Plant Breeding. 5 hours.

Prerequisite: AGY 404/604.

Lectures and laboratory periods in the field on practices and techniques used in the development of crop varieties and hybrids. (Summer quarter, alternate years; course extends into Fall quarter.)

821, 822. Special Problems in Agronomic Science. 1-5 hours each.

The planning, completion and reporting of short-time problems in one of the plant or soil sciences, other than thesis, conducted in the library, laboratory, greenhouse, or field. (Offered every quarter.)

828. Crop Responses to Microclimate. 5 hours.

Prerequisite: BOT 380, CHM 261, two senior division courses in agronomy.

Relationships between the microclimate and growth of crop plant communities are studied. Physiological and morphological factors involved in response of crops to microclimate are discussed along with application of these principles to crop production. (Winter quarter.)

829. Physiological Aspects of Plant-Soil Relations. 5 hours.

Prerequisite: Two senior division courses in agronomy or botany or permission of department.

An integration of the fundamental principles of chemistry, biochemistry and physiology as they related to crop plant growth and development. Emphasis is placed on current concepts in basic sciences and the transposition of this information into workable tools for crop management and production. (Spring quarter, alternate years).

834. Advanced Chemical Weed Control. 5 hours.

Prerequisite: AGY 434/634.

A discussion of herbicidal penetration, translocation and modes of action in plants as well as the effects of soil-herbicide interactions on persistence, movement, and activity. (Winter quarter.)

852. Advanced Soil Fertility. 5 hours.

Prerequisite: AGY 459/659 or equivalent and CHM 280 and 280L.

Physical, chemical, and bacteriological aspects of soil fertility as related to plant growth. (Fall quarter, alternate years.)

853. Methodology in Soil Chemistry. 5 hours.

Prerequisite: CHM 280 and AGY 305 or equivalent.

Special treatment of methods used in soil and plant analyses. Emphasis is placed on chemical laboratory methods and equipment used in soil investigation; however, physical and biological methods are also presented. Interpretation of experimental data is stressed. (Spring quarter, alternate years).

854. Advanced Soil Morphology and Genesis. 5 hours.

Prerequisite: AGY 454/654 and 459/659 or equivalent.

Morphological features, and concepts and theories of origin and development of soils with emphasis on clay mineralogy. (Winter quarter, alternate years).

860. Soil Physical Factors and Plant Growth. 5 hours.

Prerequisite: BOT 380 and AGY 460/660.

Consideration will be given to certain fundamental relations resulting when plants are subjected to a varying physical environment. Special emphasis will be placed upon the effects of soil moisture as related to plant growth, nutrient uptake and other physiological processes. (Spring quarter, alternate years).

888. Quantitative Aspects of Plant Breeding. 5 hours.

Prerequisite: STA 422/622 and AGY 404/604 or 411/611 or equivalent.

A study of quantitative and population plant genetics and their interrelationship with plant breeding. Provides an understanding of genetic and environmental variation and how they relate to selection procedures and choice of type of variety. (Winter quarter, alternate years).

889. Cytogenetic Aspects of Plant Breeding. 5 hours.

Prerequisite: AGY 404/604, ZOO 411/611.

A course designed to teach cytogenetic principles and cytological techniques applicable to plant breeding. Plant cytogenetics to determine the plant breeding application of chromosome number and behavior, basic mode of reproduction, pollen stainability, male sterility, apomixis, autopolyploidy, and allopolyploidy. (Winter quarter, alternate years.)

930. Thesis. 1-15 hours.

ANIMAL AND DAIRY SCIENCE

David G. Spruill
(Livestock-Poultry Building, South Campus)

The Doctor of Philosophy degree in Animal and Dairy Science is offered with the opportunity to specialize in animal breeding, nutrition, physiology of reproduction, animal production and animal products. Two other doctoral programs are available for animal and dairy science graduates. One leads to the PhD in Animal Nutrition. The other program leads to a PhD in Dairy Manufacturing and is offered jointly with the Food Science Department. The degree is given in Food Science.

Graduate programs leading to the Master of Science degree in either Animal Science or Dairy Science are offered in all general areas of animal and dairy science including dairy manufacturing. These programs are flexible enough to interest students who may want to consider the MS degree as a terminal degree and also, are designed to accommodate those graduates who want to use the MS degree as a preparatory step towards the PhD degree. Courses in the department and appropriate courses in poultry science, biochemistry, statistics, microbiology, veterinary physiology, and other departments provide in-depth training and laboratory experiences. Amino acid analyzers, gas-liquid chromatographs, a flame spectrophotometer, a gas flow Gieger tube detector, a whole body counter, an atomic absorption spectrophotometer, a sonoscope, a high pressure liquid chromatograph, liquid scintillation counters, gamma counters, ultracentrifuge, enzyme kinetic spectrophotometer, scanning and transmission electron microscopes, electrophoresis equipment, tissue culture incubators and other equipment are available for use in teaching and research. Research facilities include laboratories equipped to handle radioisotopes and many chemical and biological analyses, small and large animal metabolism rooms and equipment, large animal surgery laboratory, and research facilities on swine, beef cattle, and dairy cattle farms located near the campus and in the

state. Service of the University Computer Center is available for data processing.

Prospective students who desire financial aid may apply for assistance directly to the animal and dairy science department. A limited number of teaching and research assistantships for training students in both research and teaching and assistance to the faculty are available. Other assistantships are available through the Graduate School and application for these should be made directly to the graduate coordinator. Additional courses related to animal nutrition are listed under animal nutrition.

ANIMAL SCIENCE (AS)

610. Advanced Genetics of Livestock Improvement. 5 hours.

Prerequisite: GEN 358, STA 200 or 421/621, AS 310 or permission of department.

The development of practical and genetically sound programs involving the study and application of genetic principles underlying selection, systems of mating and performance testing. Major emphasis will be on characters of economic importance in meat animals.

641. Applied Animal Reproductive Management. 5 hours.

Prerequisite: AS 310 and 331 and 340 and any one production course.

This course deals with management of reproduction in farm animals for efficient livestock production. Application of reproduction management principles associated with artificial insemination, embryo transfer, pregnancy detection, semen collection and reproductive record management will be covered.

660. Advanced Beef Production and Management. 5 hours.

Prerequisite: AS 310, 331, 340 and 360.

Concepts, principles and techniques in modern beef production with emphasis in breeding, reproduction, nutrition, forage management, herd health and herd management.

661. Advanced Swine Production and Management. 5 hours.

Prerequisite: AS 310, 331, 340 and 361.

Concepts, principles and techniques in modern swine production with in-depth emphasis in breeding, nutrition, physiology, housing, herd health and management.

730. Advanced Livestock Feeding. 5 hours.

Prerequisite: AS 331 or permission of department.

An advanced course designed to provide current information relative to recent developments in the field of animal nutrition and their impact on livestock feeding in present day practice as well as the scientific principles on which they are based. Limited to candidates for advanced degrees in education or agricultural extension.

809. Introduction to Quantitative Genetics of Livestock Improvement. 3 hours.

Prerequisite: AS 310, STA 422/622.

An introduction to the population genetic theory associated with livestock populations and their quantitative genetic improvement.

810. Statistical Methods in Animal Science. 3 hours.

Prerequisite: STA 422/622 or equivalent and CSC 500/700 and MAT 516/716 or permission of department.

A study of experimental designs and statistical procedures particularly applicable to animal research with emphasis on multiple regression and least squares analysis.

811. Advanced Quantitative Genetics of Livestock Improvement. 4 hours.

Prerequisite: MAT 516/716 and STA 422/622 and MPG 414/614 or AS 809 or permission of department.

Advanced study of population and quantitative genetics.

840. Advanced Animal Reproduction. 5 hours.

Prerequisite: AS 340, VPH 608.

The physiological mechanisms associated with reproduction in farm animals will be studied in depth. Recent concepts on the interaction of the reproductive endocrine system, the mechanism of hormone action and hormone measurement will be studied. The reproductive processes from follicular development through parturition will be thoroughly analyzed with emphasis placed on the control of those processes.

870, 871. Special Problems in Animal Science. 5 hours each.

Prerequisite: Permission of department.

Library and laboratory problems dealing with different phases of livestock production.

880. Seminar in Animal Science. 1 hour per quarter. (Max. 6 hours.)

Prerequisite: AS 310, 360, 361, and 340 or equivalent.

Weekly meetings devoted to discussions of current problems and research in the field of animal science.

930. Thesis. 1-15 hours.

DAIRY SCIENCE (DS)

642. Milk Secretion. 3 hours.

Prerequisite: VPH 310 or equivalent.

The application of certain fundamentals of anatomy, biochemistry, and physiology to a study of milk secretion. The relationship of various farm practices to maximum milk yields will be discussed from the fundamental standpoint. One practical laboratory experience will be included per week. Discussions and demonstrations will be across several species.

652. (MIB) Microbiology for Sanitarians. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MIB 350 or DS/MIB 357.

Study of microorganisms in fluid milk and milk products, their relation to spoilage and epidemiology. Inspection and enforcement procedures.

653. Microbiology of Fermented Dairy Foods. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MIB 350 or DS/MIB 357.

Study of microorganisms utilized in manufacture of cheese, cultured milks, sour cream, and other dairy products. Defects caused by microorganisms and bacteriophages. Flavor development.

663. Advanced Dairy Cattle Feeding and Management. 5 hours.

Prerequisite: DS 362, AS 331, AS/DS 330 or permission of department.

The application of fundamental knowledge of nutrition, physiology, environment and economics in the feeding and management of the dairy herd.

850. Dairy Chemistry. 5 hours.

Prerequisite: FS 414/614 or BCH/BIO 310 or BCH 401/601.

A comparative study of the fundamental chemical and physical properties of milk and milk products. The basic laws concerning factors that affect the chemical compositions, pH, viscosity, surface tension and coagulation of milk will be studied. The course will consist of lectures, discussion, literature reviews, special reports and laboratory exercises.

851. The Nutritional Properties of Dairy Products. 5 hours.

Prerequisite: DS 850 or equivalent.

A study of the basic nutritional properties of the constituents of milk and milk products and the effect of processing and storage methods upon these nutritive values.

852. The Chemical Analysis of Dairy Products. 5 hours.

Prerequisite: FS 414/614 or BCH/BIO 310 or BCH 401/601.

Theory and practice in analytical methods used for control and research in dairy chemistry; analysis of milk fat, proteins, lactose, lactalbumin, lactoglobulin and minerals; methods of determining hydrolytic and oxidative rancidity; factors involving rennin action, surface tension, viscosity and freezing point determinations. The course consists of lectures and laboratory assignments.

870, 871. Special Problems in Dairy Science. 5 hours each.

Prerequisite: Permission of department.

A study of research work on the subject with special problems to be selected.

873. Special Problems in Dairy Technology. 2-5 hours.

Prerequisite: Permission of department.

A special course for students qualified to carry out individual projects in dairy production, bacteriology or manufacturing. Work is done independently of the regularly scheduled classes. The course is available only to advanced graduate students and with the consent of the major professor.

880. Graduate Seminar. 1 hour per quarter. (Max. 6 hours.)

Prerequisite: Permission of department.

Weekly meetings devoted to discussion of research problems.

930. Thesis. 1-15 hours.

ENVIRONMENTAL HEALTH SCIENCE PROGRAM (EHS)

659. (MIB) Microbiology of Water and Wastewater. 5 hours.

Prerequisite: CHM 261, MIB 350.

In-depth study of microbial life of water and wastewater, domestic and industrial, with scrutiny of current treatment processes. Sampling methods will be demonstrated along with proper storage of samples. Study will be made on effects of different types of waste on microbial population of rivers and streams.

ANIMAL NUTRITION (AN)

Walter M. Britton

(Livestock-Poultry Building, South Campus)

This program is interdepartmental, including the departments of Animal and Dairy Science, and Poultry Science. It embraces both the basic and applied phases of nutrition including the metabolism, biochemistry, and physiology of minerals, lipids, carbohydrates, proteins, vitamins, etc., in monogastric and ruminant animals. Strong collateral support, through course offerings and research cooperation, also is available in the areas of biochemistry, physiology, genetics, statistics, veterinary medicine, and microbiology. Facilities for research include adequately equipped nutritional, biochemical, and physiological laboratories, experimental animal quarters for many farm and laboratory species and instrumentation for many types of metabolic studies including, for example, the use of isotopes. The goal is to provide a challenging program, supplying opportunity for students to develop their creative ability to the point where their knowledge and motivation will enable them to make major contributions and assume leadership in the nutrition profession. No foreign language is required for the doctoral degree.

636. Ruminant Nutrition. 5 hours.

Prerequisite: AS 330, VPH 310, CHM 240, and BCH 310.

An in-depth study of digestive physiology and metabolism of the rumen. Treats systematically the diversity of function, complex symbiotic relationships of the rumen microflora-microfauna, and the physiology and metabolism of the rumen as related to digestion, absorption and utilization of nutrients. Provides a framework in which practical applications can be evaluated.

637. (PS) Monogastric Nutrition. 5 hours.

Prerequisite: AS 330, CHM 240, and VPH 310 or PS 380.

An advanced course in the comparative nutrition of monogastric animals with special but

not exclusive consideration of poultry and swine. Guided studies of the literature of nutrition will be made enabling the student to witness the discovery of nutrition principles and to distinguish between established fact and unsolved problems.

831. Bioenergetics in Animal Nutrition. 3 hours.

Prerequisite: AS 330, VPH 310 or PS 380, CHM 240, BCH 401/601.

A detailed treatment of energy transformations in animals. Application of thermodynamic principles to the conservation and conversion of energy in animals. The energy values of feedstuffs as determined by various methods will be evaluated. (Offered alternate years.)

832. Vitamins in Animal Nutrition. 3 hours.

Prerequisite: AS 330, VPH 310 or PS 380, CHM 240, BCH 401/601 and/or permission of department.

A comprehensive and systematic treatment of the chemistry and physiology of the vitamins and their roles in animal metabolism. Integrates cellular biochemistry and physiology of the vitamins. (Offered alternate years.)

833. Minerals in Animal Nutrition. 3 hours.

Prerequisite: AS 330, VPH 310 or PS 380, BCH 401/601.

A treatment in depth of the role of minerals in animals from the standpoint of their nutritional significance. Deals with the physical and chemical principles while emphasizing the dynamic behavior and function of individual elements in the organisms as a whole. (Offered alternate years.)

834. Proteins and Amino Acids in Animal Nutrition. 3 hours.

Prerequisite: CHM 240, AS 330, VPH 310 or PS 380, BCH 401/610 or 801.

A study of metabolism and utilization of dietary proteins and amino acids by animals. Methods of supplying the amino acids for most efficient utilization for maintenance, growth and the production of protein products. Evaluation of the quality of food proteins to meet nutrient requirements. Methods for separation of proteins, amino acid analysis and determination of protein quality will be studied. (Offered alternate years.)

835. Carbohydrates and Lipids in Animal Nutrition. 3 hours.

Prerequisite: AS 330, BCH 401/601 or 801.

An examination of the utilization and metabolism of carbohydrates and lipids by animals. A systematic evaluation of biochemical properties of carbohydrate and lipid foods and their effects on absorption and metabolism of the nutrients of the animal diet. (Offered alternate years.)

838. Experimental Methods in Animal Nutrition. 5 hours.

Prerequisite: AS 330, CHM 240.

A laboratory course concerned with biochemical nutrition methodology and its utilization in performing experiments, recording and interpreting data and writing scientific reports.

839. Nutrition Seminar. 1-6 hours.

Topical discussion of current problems and papers of scientific work in animal nutrition to be presented by the students, faculty and guest speakers.

930. Thesis. 1-15 hours.

ANTHROPOLOGY (ANT)

Ben Blount
(Baldwin Hall, North Campus)

The Department of Anthropology offers programs leading to the degrees of Master of Arts and Doctor of Philosophy. The MA program is designed to give the student a broad background in the four subfields of anthropology: sociocultural anthropology, archaeology, biological anthropology, and linguistics anthropology. The PhD program is designed to provide students with specialization in one of the four subfields and in one of the department's geographical areas of concentration: southeastern U.S., Latin America, and Sub-Saharan Africa.

600. Anthropology of Economic Systems. 5 hours.

Prerequisite: ANT 102 or permission of department.

An anthropological description of the ways that societies from prehistoric to present times have organized themselves economically. Special attention will be given to the maintenance of cultural traditions. The roles of traditional and third world societies in the modern international economic order will also be discussed.

602. The American Indian. 5 hours.

Prerequisite: ANT 102 or permission of department.

A survey course on the cultural development of the aboriginal population of the New World.

605. Cultural Anthropology. 5 hours.

Prerequisite: ANT 102 or permission of department.

Concepts and methods for analysis of the institutions of non-literate peoples and their comparison with modern societies.

610. Kinship and Social Organization. 5 hours.

Prerequisite: ANT 102 or permission of department.

The study of the ways and mechanisms by which individuals are organized into social groups. Topics covered are kinship, lineages, clans, associations, tribes, and cultural groups. Recent developments in biological bases of

social behavior and in social interaction studies will also be discussed.

613. Comparative Belief Systems. 5 hours.

Prerequisite: ANT 102 or permission of department.

An examination of the structural properties of preliterate belief systems and the ideological consequences of literacy.

620. Field Methods in Archaeology. 5 hours.

Prerequisite: ANT 102 or permission of department.

Methods of archaeological reconnaissance, survey excavation, laboratory preparation and analysis of collected materials.

622. Introduction to Archaeology. 5 hours.

Prerequisite: ANT 102 or permission of department.

The course will survey a broad range of archaeological goals, methods, techniques and interpretations. Particular prehistoric cultural sequences or projects will be examined in depth. The interdisciplinary relationship of archaeology with other social, life, and earth sciences will be stressed. (This course is prerequisite to all advanced courses in archaeology. Not for graduate credit for a degree in anthropology.)

623. Introduction to Research Methods. 5 hours.

Prerequisite: ANT 102 or permission of department.

The course will examine a variety of scientific, comparative, and analytical methods that are useful in archaeological and general anthropological research.

624. Laboratory Methods in Archaeology. 5 hours.

Prerequisite: ANT 102 or permission of department.

An introduction to the range of environmental, chronological, preservational, and analytical methods and techniques that are intrinsic to the accomplishment of archaeological research.

625. Old World Archaeology. 5 hours.

Prerequisite: ANT 102 or permission of department.

A survey of cultural developments in prehistory that range from the earliest evidence of man to the foundations of civilization.

626. New World Archaeology. 5 hours.

Prerequisite: ANT 102 or permission of department.

A survey of aboriginal cultural developments throughout the New World from the first ar-

rival of man in the hemisphere during the late Pleistocene to the demise of native cultures under intensive European contact.

631. Archaeology of Eastern North America. 5 hours.

Prerequisite: ANT 102 or permission of department.

A survey of prehistoric and early historic cultural developments in the North American Plains and Eastern Woodlands.

635. African Prehistory. 5 hours.

Prerequisite: ANT 102 or permission of department.

The range of prehistoric cultural variability is examined as well as the goals, procedures, and problems of accomplishing prehistoric research in Africa.

641. Indians of the Southeastern United States. 5 hours.

Prerequisite: ANT 102 or permission of department.

The study of the cultural and social characteristics of the indigenous peoples of the southeastern United States from the time of earliest European contact to the present.

642. Afro-American Societies. 5 hours.

Prerequisite: ANT 102 or permission of department.

Comparative ethnology of New World black populations; special attention is devoted to the cultural adaptations of black populations to various colonial and republican powers, with emphasis on Latin America and the Caribbean.

643. Indians of Mexico and Central America. 5 hours.

Prerequisite: ANT 102 or permission of department.

Comparative ethnology of the Indians of Mexico and Central American from pre-Columbian times to the present.

644. Latin America: Peoples and Institutions. 5 hours.

Prerequisite: ANT 102 or permission of department.

The study of contemporary Latin American peoples and institutions in their community setting; special attention is devoted both to the original impact of Western civilization on the indigenous communities of South America, and to recent social changes incident to the introduction of modern agricultural and industrial technology.

645. Africa: Peoples and Institutions. 5 hours.

Prerequisite: ANT 102 or permission of department.

The study of peoples and institutions of Africa, south of the Sahara, starting with earliest evidences of indigenous peoples; special emphasis will be placed on changes currently taking place.

646. South Asia: Peoples and Institutions. 5 hours.

Prerequisite: ANT 102 or permission of department.

Comparative ethnology of South Asia.

650. Methods in Social Anthropology. 5 hours.

Prerequisite: ANT 102 or permission of department.

An introduction to field methods used in social anthropology with emphasis on techniques used in the study of non-Western cultures and comparisons with methods used in the study of contemporary American society.

652. History of Anthropological Theory. 5 hours.

Prerequisite: ANT 102 or permission of department.

A survey of the development of anthropological theory.

653. (GGY) Urbanization in Developing Countries. 5 hours.

Prerequisite: ANT 400/600 or SOC 432/632 or POL 431/631 or GGY 358 or permission of department.

This course offers a detailed understanding of the processes of urbanization and development in the areas of the world undergoing modernization and cultural change. The city and its role are traced from pre-industrial manifestations to the modern urban centers of the eastern and western worlds.

655. Ethnohistory. 5 hours.

Prerequisite: ANT 102 or permission of department.

An examination of the methods used by anthropologists to reconstruct the history of preliterate societies from archaeological evidence, documentary evidence, and oral traditions. The ethnohistory of southeastern United States will be emphasized.

656. Applied Anthropology. 5 hours.

Prerequisite: ANT 102 and 5 hours advanced social science or permission of department.

Applied anthropology is a specialized sub-discipline within the broad field of anthropology. The focus of interest is on social and cultural issues and problems that accompany technological change and modernization, especially in developing countries. Theoretical concepts and factual knowledge from all areas of anthropology are brought to

bear on the social and cultural components of planned improvement programs in agriculture, health and medical services, educational systems, and community development.

669. (LIN) Historical Linguistics. 5 hours.

See LIN 669.

670. Principles of Physical Anthropology. 5 hours.

Prerequisite: ANT 102 or permission of department.

Methods and theory related to the study of mechanisms in human variation, adaptation, and evolution from a biological perspective.

671. Human Origins. 5 hours.

Prerequisite: ANT 102 or permission of department.

A study of the evolutionary history of the human species through examination of the fossil record.

672. Osteology and Osteometrics I. 5 hours.

Prerequisite: ANT 102 or permission of department.

A comprehensive study of human skeletal anatomy and its relevance to taxonomic positioning of the genus *Homo* and related non-human primates. Topics include morphological variation, aging, sexing, paleopathology, paleodemography.

675. (PSY) Principles of Primate Phylogeny. 5 hours.

Prerequisite: ANT 102 or permission of department.

An introduction to the interrelationships between morphology, behavior, and systematics for students of primate behavior.

676. (PSY) Comparative Physical and Psychological Development of the Primates. 5 hours.

Prerequisite: ANT 102 or permission of department.

A consideration of species and developmental environment as they influence normal and abnormal behavioral development.

677. (PSY) Organization of Primate Social Groups. 5 hours.

Prerequisite: ANT 102 or permission of department.

The interaction of ecology, phylogeny, individual behavior, and group organization is considered in comparative perspective.

679. Human Adaptation. 5 hours.

Prerequisite: ANT 102, BIO 101, 102 and permission of department.

An exploration of human diversity as response to environmental stress, from both a biological and cultural perspective. Topics include:

adaptation to heat, cold, altitude, malnutrition and infectious disease; the impact of westernization and technological advancement on human biological function; and growth and development of the individual under environmental stress.

680. (LIN) Introduction to Linguistics. 5 hours.

Prerequisite: ANT 102 or permission of department.

An introduction to structural linguistics from the standpoint of anthropology, emphasizing elementary descriptive techniques and a consideration of the relationships among language, culture, and society.

681. (LIN) Phonetics and Phonology. 5 hours.

Prerequisite: ANT/LIN 480/680 or permission of department.

Phonetic transcription of various languages dictated by native and non-native speakers; understanding of the phonemic principle by the solution of selected problems which consist of phonetically transcribed data.

682. (LIN) Linguistics: Morphology. 5 hours.

Prerequisite: ANT/LIN 480/680 or permission of department.

Grammatical analysis of phonemically transcribed data from numerous languages of the world.

685. (LIN) American Indian Languages. 5 hours.

Prerequisite: ANT/LIN 480/680 or permission of department.

The native languages of North America: classification, grammatical structures, and genetic affiliations.

686. (LIN) Language in Culture and Society. 5 hours.

Prerequisite: ANT/LIN 480/680 or permission of department.

An introduction to the anthropological study of language in its cultural setting and in social contexts.

688. (LIN) Linguistics: Field Methods. 5 hours.

Prerequisite: ANT/LIN 481/681 and 482/682 or permission of department.

The techniques of recording and analyzing a foreign language by working directly with a native speaker.

690. Special Topics in Anthropology. 5-15 hours.

Prerequisite: ANT 102 or permission of department.

A program of semi-independent study including reading and discussions of current developments in anthropology.

692. Advanced Archaeology. 5 hours.

Prerequisite: ANT 622.

An examination of fundamental issues in modern archaeology.

695. Advanced Cultural Anthropology. 5 hours.

Prerequisite: ANT 405/605.

An examination of cultural and social anthropology.

697. Advanced Anthropological Linguistics. 5 hours.

Prerequisite: ANT 480/680.

An advanced survey of anthropological linguistics.

698. Advanced Biological Anthropology. 5 hours.

Prerequisite: ANT 670.

An examination of current trends in bioanthropology.

800. Special Topics in Anthropology. 5-20 hours.

Prerequisite: Permission of department.

Opportunity to do intensive study on an individual basis in the field of the graduate student's major interest.

803. Prehistorical and Historical Anthropology. 5 hours.

Prerequisite: ANT 622 or permission of department and course work equivalent to ANT 622.

A survey of the use of prehistorical and historical materials in the anthropological study of present and past societies. A critical review and examination is made of the methodology in archaeology, prehistory, and ethnohistory.

804. Seminar in Anthropology. 5 hours.

Selected topics in anthropology.

805. Anthropology of Complex Societies. 5 hours.

Prerequisite: Permission of department.

A consideration of the origins of societies that are large-scale and that have developed specialized roles for their members. An investigation is made of the cultural factors that have contributed to the development of complex societies, especially non-Western ones.

806. Primate and Human Ecology. 5 hours.

Prerequisite: ANT 670 or permission of department and course work equivalent to ANT 670.

A study of the interrelationships among biology, social organization, cultural diversity, and the physical environment. Emphasis is placed on the ecology of human and primate societies that affect and constrain biocultural adaptation.

820AB. Seminar in Archaeology. 5 hours each.

Prerequisite: Graduate standing with 15 hours of advanced anthropology.

An advanced seminar for areas of special interest in the field of archaeology. Topics to be selected according to need.

830. Archaeological Theory. 5 hours.

Prerequisite: ANT 692.

A consideration of major theoretical contributions in archaeology and prehistory with emphasis upon theory formulation, implementation, and revision.

835. (PSY) Field and Laboratory Techniques in Physical Anthropology and Primatology. 5 hours.

Prerequisite: ANT 670 or 475/675 and permission of department.

Different methodological approaches and their consequences are compared in both field and laboratory studies. Data collection and analysis techniques are related to theoretical explanations. Elementary statistics and familiarity with the basic subject matter is assumed.

853. (GGY) Urbanization in Developing Areas. 5 hours.

See GGY 853.

870. Seminar in Physical Anthropology. 5 hours. (Max. 15 hrs.)

Prerequisite: Permission of department.

An advanced seminar for areas of special interest in the fields of physical anthropology and primatology. Topics to be selected according to need.

887. (LIN) Seminar in Language, Culture, and Society. 5 hours. (Max. 15 hrs.)

Prerequisite: ANT/LIN 480/680 or 486/686 or permission of department.

A study of topics and issues in language and its relationship with culture and society. Specific topics to be covered in individual courses are language acquisition, bilingualism, sociolinguistics, pidgins and creoles, and variation theory.

888. (LIN) Seminar in Anthropological Linguistics. 5 hours. (Max. 15 hrs.)

A study by the seminar method of theoretical and methodological problems in the study and analysis of languages.

889. (LIN) Linguistics: Advanced Field Methods. 5 hours.

Prerequisite: ANT/LIN 688.

Continuation of ANT/LIN 688. The techniques of recording and analyzing a foreign language by working directly with a native speaker.

900. Research in Anthropology. 1-15 hours.
(Max. 30 hrs.)

Prerequisite: Approval of adviser or graduate coordinator.

Independent research course on topics approved by adviser and graduate coordinator.

930. Thesis. 1-15 hours.

ART (ART)

Francis Ruzicka

(Visual Arts Building, North Campus)

The Department of Art offers programs for the Doctor of Philosophy in Art, Master of Fine Arts and Master of Art in Art History, all organized to develop the student's creative independence and professional capability as a producing artist, designer, and scholar in a total environment of living art. In conjunction with the College of Education, the Department of Art offers programs in art education leading to the Master of Art Education, Specialist in Education, and Doctor of Education degrees. The departmental philosophy particularly stresses that the above goals meet in the art educator who must attain professional standards in the graduate studio as well as in the classroom.

Candidates for the interdisciplinary PhD in Art must demonstrate competence in three of the following areas of study: history of art, theory and criticism of art, art education in the general sense and concentrated study in a field other than art but relevant to it. Also required are a reading knowledge of a foreign language and oral and written comprehensive examinations.

Students in the Master of Arts program in art history must demonstrate a reading knowledge of a foreign language, pass a written general examination in art history, submit a thesis and pass a final oral examination.

Applicants are admitted for all quarters. Deadlines are available upon request. Applications for departmental awards and assistantships should be made to the Graduate Coordinator of the art department before February 15th for the fall quarter. Information on additional fellowships will be made available upon request.

The Georgia Museum of Art has facilities for large traveling shows. A strong study collection of modern American art is supplemented by works on loan from the National Gallery in Washington, D.C.

The following review and evaluation procedures apply to all students enrolled in a program leading to the MFA degree in studio art:

Upon completion of 20 quarter hours of resident graduate work, the student must pass an oral examination which, with sup-

porting creative studio work, will constitute an evaluation of his/her capability for continued enrollment in the MFA degree program. The evaluation will be conducted by a duly appointed faculty committee, which will determine if the student will be (1) continued in the regular MFA program, or (2) required to complete additional work beyond the regular MFA requirements, for the specific purpose of improving his/her skills, or (3) counseled to withdraw from the MFA program and consider alternative educational goals.

Students who successfully meet the requirements for continued enrollment in the MFA degree program, will be required to arrange a public thesis exhibition of creative studio work during the final quarter of residence. The exhibition will be evaluated by faculty, who will determine if the exhibited work represents a satisfactory level of professional accomplishment by the candidate. Faculty approval of the thesis exhibition is a departmental requirement for graduation. Also see page 42 for further details of the MFA program.

Although some courses listed below have specific prerequisites, instructors for graduate courses may waive some prerequisites if the student can demonstrate adequate training or experience. Likewise, the instructor may advise a student to withdraw from the class due to inadequate preparation or motivation. Courses in the studio areas are usually scheduled to meet two hours a day.

601. Techniques of Art Appreciation and Criticism. 5 hours.

An inquiry into alternative modes of analyzing, interpreting and evaluating works of art; the construction of art appreciation curricula; critical technique as employed in classroom teaching strategies.

635. Art Criticism. 5 hours.

Prerequisite: Four courses in fine arts, two of which must be in the senior division. The theory and practice of analyzing, interpreting and appraising works of art: The student will be required to demonstrate competence in critical analysis and explication.

650. Guided Foreign Study in Art History. 5 hours.

Prerequisite: Two senior division art history courses or comparable background and permission of department.

A systematic, on-the-spot study of a selected and logically unified group of art works found in foreign collections, sites, and museums.

The range of study will be determined by the instructor and basically be within the field of the visual arts. Where possible local library and archival resources will be used. Lecture and discussions before and during the period of travel will coordinate the activities and bring in factors of local environmental influence.

665. Renaissance Architecture. 5 hours.

A study of the "new" architecture of the 15th and 16th Centuries, emphasizing such bases of the style as general principles, revival of classical forms, and individual contributions. Italian works by such masters as Brunelleschi, Alberti, Bramante, Michelangelo and Palladio will be discussed.

666. Architecture and Decoration in 18th Century France and England. 5 hours.

A study of the various styles of architecture and interior decoration in the leading 18th Century centers. Discussion will revolve around changing concepts of form, expanding sources of inspiration, reaction against tradition, and theoretical reevaluation of design. Topics to be considered are the Rococo, Neoclassicism, the Gothic and Greek revivals, and the Chinese vogue.

667. Rococo Art. 5 hours.

This course will survey the great flowering of the figurative arts during the 18th Century in France, England and Italy. The arts of painting and sculpture will be examined within the context of those social, economic and political forces that molded their development, and also with reference to contemporary movements in literature, music and the theatre.

672. Venetian Art. 5 hours.

A concentrated study of such great artists as Giovanni Bellini, Titian, Tintoretto, Veronese, on the architecture of Palladio, and on great Venetian buildings such as St. Mark's and the Ducal Palace. All of these are examined in terms of the individual creativity of the artist, and within the context of social, cultural and economic forces that condition his/her development.

673. The Classical Tradition in the Visual Arts. 5 hours.

A discussion of classic examples of stylistic evolution. Topics vary from year to year: aspects of the development of classic and Gothic stone carving; classic and Renaissance drawing; Phidias, Raphael, and Poussin.

674. Art of the Bronze Age. 5 hours.

Prerequisite: ART 287 and either 288 or 289.

A study of the art of the Bronze Age in Mesopotamia, Egypt, Crete and Mainland Greece. Sculpture, wall-painting and monumental architecture from these contemporary cultures will be examined, along with possible influences of one culture on another.

675. Early Greek Art. 5 hours.

Prerequisite: ART 287 and either 288 or 289.

A study of stylistic and thematic developments in the major media of early Greek art from the protogeometric through the archaic periods (1050-480 B.C.). Representative examples of free-standing sculpture, architecture and architectural sculpture, and vase-painting will be examined.

676. Classical and Hellenistic Greek Art. 5 hours.

Prerequisite: ART 287 and either 288 or 289.

A study of the masterpieces and major monuments of Greek art from the Classical and Hellenistic periods. Both original works and Roman copies of famous original sculptures and paintings will be presented, as well as major monuments such as the Parthenon and the Greek Altar of Zeus at Pergamon.

677. Roman Art and Architecture. 5 hours.

Prerequisite: ART 287 and either 288 or 289.

A study of the art and architecture of the late Roman Republican era and the Roman empire (ca. 100 B.C.-300 A.D.). Portraiture, relief sculpture and wall-painting will be investigated, along with major architectural structures as Pompeii and Rome.

679. Monuments and Styles of Western Art. 5 hours.

The geography of art. After a preliminary review of historical styles, the course (lecture and discussion) compares such geographical traditions as North and South in European art; the psychology of European "countries" such as French, Netherlandish, Italian; the contrast of modern Europe and America; the perennial contrast of worldwide East and West.

680. Art of the Italian Renaissance. 5 hours.

A study of the major arts of the Renaissance Period with emphasis on painting and sculpture.

681. History of Northern Renaissance Art. 5 hours.

Historical study of the architecture, sculpture, painting, and minor arts north of the Alps from the waning of the medieval period to around the beginning of the 17th Century. The artistic achievements in France, Germany, England, and the Low Countries will be

presented against the background of their political, social, and literary accomplishments.

682. Backgrounds of Modern Art, 19th Century. 5 hours.

A study of the cultural and historical roots of modern architecture, painting and sculpture as they are found in Europe during the 19th Century. Particular attention is given to the relationship of the arts to their political, social and economic contexts. Some consideration will be given to parallel developments in the arts of the United States.

683. Modern Art, 20th Century. 5 hours.

A study of the history of 20th-Century European architecture, painting and sculpture. Particular attention is given to the relationship of the arts to their political, social and economic contexts. Some consideration will be given to parallel developments in the arts of the United States.

685A. The Art of the Baroque in Italy, Spain and France. 5 hours.

An analysis, beginning with the 17th Century in France, Italy and Spain, detailing the rise of the Baroque and its development.

685B. The Art of the Baroque in Holland, Belgium and England. 5 hours.

Intensive investigation of the art of northern Europe, concentrating on such major artists as Rubens, Rembrandt, Vermeer and Van Dyck, while relating the art of the period to the political, philosophical and literary environment.

685C. Baroque Architecture. 5 hours.

Development of architecture and decoration in the 17th and 18th Centuries. Relations with sculpture, gardening, city planning and other baroque forms will be considered.

685D. Baroque Art Theory. 5 hours.

A conceptual approach to 17th and early 18th Century art. The course deals with attempts by writers in the Baroque age to define the role of the artist, the sources of creativity, and the purposes of art. It also examines the efforts of major theorists of our own day to formulate a concept of the Baroque that is meaningful in terms of style analysis and aesthetics.

688A. Art and Architecture of Ancient Peru. 5 hours.

Prerequisite: Two courses from ART 287, 288, 289 or permission of department.

A study of the art and architecture of the major pre-Columbian Peruvian cultures, in-

cluding Chavin, Paracas, Nasca, Moche, Huari-Tiahunaco, Chimú, and Inca.

688B. Art and Architecture of Ancient Mesoamerica. 5 hours.

Prerequisite: Two courses from ART 287, 288, 289 or permission of department.

A study of the art and architecture of the major pre-Columbian Mesoamerican cultures, including the Olmec, the Maya, Teotihuacan, Monte Alban, Veracruz, the Mixtecs, and the Aztecs.

689. Post-Columbian Latin American Art. 5 hours.

A study of the unique product resulting from the combination of Western culture with native arts in Latin America from the 15th Century to the present.

693A. Early Christian and Byzantine Art. 5 hours.

An analysis of the origins and the rise of early Christian architecture and art in the Mediterranean countries and of the beginnings of Christian art in the North.

693B. Early Medieval Art. 5 hours.

A study of the architecture, painting and sculpture from the Carolingian to the Romanesque periods with emphasis on the Romanesque architectural ensembles.

693C. Gothic Art. 5 hours.

A study of Gothic architecture and art beginning with the developments of early Gothic architecture and sculpture in the 12th Century and ending with the international Gothic of the late 14th Century. Special emphasis will be given to the architecture and sculpture of the important French cathedrals.

698. Arts of the United States Before 1865. 5 hours.

A study of the arts of the area of the United States beginning with that of the American Indians and continuing with the architecture, sculpture, painting, and minor arts from colonial times until 1865. Particular attention is given to the sources for these arts and their relationship to the physical and social situation.

699. Arts of The United States, 1865-Present. 5 hours.

A study of the arts of the United States from 1865 through the periods of industrialization and international political and economic leadership. Stress is given the evolving role of American cultural characteristics found in architecture, sculpture, painting, and minor arts (particularly industrial design), their present-day manifestations and significance.

702. Drawing and Composition. 5 hours.

703. Drawing and Composition. 5 hours.

704. Advanced Lettering and Typography. 5 hours.

Prerequisite: B.F.A. equivalent and permission of department.

Creative manipulation of lettering, calligraphy, plastic patterns and technical processes integrated toward functional communication.

713. Crafts for Teachers. 5 hours.

Prerequisite: Two senior division courses in art, permission of department.

A course in crafts for classroom teachers. Emphasis will be placed on the use of simple hand tools and materials in adapting a crafts program to children at various age levels, and in integrating this program with classroom activities.

716. Modeling and Carving. 5 hours.

Prerequisite: Two senior division courses in art, permission of department.

A course in sculpture for classroom and art teachers. Materials readily available to teachers, such as native clays, wood, metal and stone, will be used to develop a sense of the possibilities and limitations of each. Included is appreciation of plastic concepts of other periods and our own time.

717ABC. Advanced Printmaking. 5 hours each.

Prerequisite: Minimum of four senior division courses in drawing and painting.

Advanced work in printmaking media including the traditional intaglio processes of etching, engraving, dry-point, aquatint and mezzotint; the various relief and planographic processes, the collograph and serigraph processes and the combination of these various processes.

721AB. Photographic Design. 5 hours each.

Prerequisite: Permission of department.

Independent investigation for students having sufficient background and technical skill in creative photography and design extension.

722AB. Photographic Design. 5 hours each.

Prerequisite: Permission of department.

Proposal and solution of technical and design problems in photography based on thorough search of literature and individual experimentation.

723ABCDE. Special Problems in Art Education. 1-10 hours each. (Max. 10 hours.)

Prerequisite: Permission of department.

Specific problem areas, according to in-

dividual needs, are investigated, discussed and evaluated. (Maximum of 10 hours toward a degree.)

- A. Specific problems and experiences in teaching art.
- B. To adult populations, e.g., prisoners and the aged.
- C. In mental health facilities.
- D. With handicapped children.
- E. In community, recreation, and day care centers.

731. Painting. 5 hours.

732. Painting. 5 hours.

735. Philosophy of Art Education. 5 hours.

Prerequisite: Two senior division courses in art.

The course deals with the theoretical grounds for the conduct of art instruction as found in the thought of William Morris, John Dewey, Russell Lynes, Louis Kronenberger, Viktor Lowenfeld, Thomas Munro, Moholy-Nagy, Lyman Bryson and others.

736. The Teaching of Art in the Secondary School. 5 hours.

Prerequisite: Two senior division courses in art.

For advanced students in art education and administration of secondary school programs. Recommended practice in qualitative curriculum planning, together with laboratory projects that identify the unique problems in secondary school art, including philosophical, motivational and evaluative aspects.

737. Curriculum Development in Art Education. 5 hours.

Prerequisite: Two senior division art or art education courses and permission of department.

The following major substantive issues in curriculum development in art education will be considered and analyzed: meaning and method of curriculum improvement; guide lines for curriculum improvement; curriculum decision making; testing and evaluating operational curriculum innovations; and focus on change.

739. Supervision of Art. 5 hours.

Prerequisite: Two senior division courses in art.

A seminar approach, dealing with the specific problems of the supervisor, consultant or director of the art program in the community schools, including qualitative curriculum planning and strategies for building the art potential of the classroom teacher.

740. The Teaching of Art in the Elementary School. 5 hours.

Prerequisite: Two senior division courses in art.

For advanced students in art education and administration of elementary school programs. Recommended practices in qualitative curriculum planning, together with laboratory experiments that identify the unique problems in elementary school art, including philosophical, motivational and evaluative aspects.

741. History of Art Education. 5 hours.

Prerequisite: Two senior division courses in art or art education.

The development of art educational theory and practice in the institutional setting of American schools, beginning with the industrial arts and drawing instruction initiated in the Massachusetts schools in the 19th Century; the theories of Arthur Wesley Dow, Walter Smith, Royal Bailey Farnum, Norman C. Meier, John Dewey, Viktor Lowenfeld, Thomas Munro, and others. European figures such as Franz Cizek, Herbert Read, Walter Gropius, and L. Moholy-Nagy will also be considered.

743. Readings in Art Education. 5 hours.

Prerequisite: Graduate standing as art education major.

An inquiry into the dominant forces that have shaped and are influencing contemporary art education. Consideration will be given to the writings of Plato, Aristotle, Rousseau, Herbart, Pestalozze, Forebel, Dewey, Bruner and McLuhan.

748. History of Fabric Art. 5 hours.

Study of the historical development of the fabric arts from the prehistoric period to the present.

749. Fabric Design. 5 hours.

Prerequisite: Art 350A.

Investigation of non-woven structures (looping, coiling, crochet, etc.) and utilization of their unique potentials.

750AB. Fabric Design-Structure. 5 hours each.

Prerequisite: Two senior division fabric design courses and permission of department.

Problems in fabric structure for advanced students in fabric design who are able to carry on independent study. Research problems combining process with design in consultation with the instructor.

751AB. Advanced Fabric Design. 5 hours each.

Prerequisite: Two senior division courses in fabric design and permission of department.

Problems in fabric decoration for advanced students in fabric design who are able to carry on independent study. Research technology combining dye, fiber and application process with design and function or selection in consultation with the instructor.

752. Jewelry and Metalwork. 5 hours.

Prerequisite: Two senior division courses in jewelry or metalwork, and permission of department.

An investigation into the properties of various metals and how those properties relate to processes and function of form and aesthetics.

753AB. Jewelry. 5 hours each.

Prerequisite: Two senior division art courses and permission of department.

An advanced study of jewelry making processes and development of individual interpretations of those processes and products.

754AB. Metalwork. 5 hours each.

Prerequisite: Two senior division art courses and permission of department.

Problems in design, forming and constructing of various metals including copper, silver and gold. Independent study and emphasis on research is employed for solutions to design problems. The examination of the uniqueness of metal as a material is aimed in both functional and sculptural directions.

760. Advanced Ceramic Design. 5 hours.

Prerequisite: A minimum of two senior division courses in ceramics.

This course is designed to promote individual development in the use of the materials and processes of the ceramic designer. Emphasis will be placed upon the functional and aesthetic requirements of form and ornament in contemporary ceramics.

761. Historical Processes in Ceramics. 5 hours.

Prerequisite: ART 760.

This course is planned to offer the graduate student an opportunity to do individual research into the ceramics of the past and to adapt the knowledge obtained to technical and aesthetic solutions of contemporary problems.

762. Individual Research in Ceramics I. 5 hours.

Prerequisite: ART 761.

The posing and solving of technical and design problems in ceramics based on thorough investigation of available literature and on information gained in individual experimentation.

763. Individual Research in Ceramics II. 5 hours.

Prerequisite: ART 762.

A continuation of ART 762.

771. Sculpture — Construction. 5 hours.

This course deals with problems of composition, abstract and figurative, as they relate to sculpture in the round and relief.

775. Advanced Figure and Portrait Study in Sculpture. 5 hours.

Advanced figure modeling. Working in a variety of media from the model, emphasizing the structural and sculptural aspects of form. Anatomy and use of anatomical forms are also stressed.

776ABC. Sculpture Materials. 5 hours each.

Prerequisite: Permission of department.

A course concerned with the student relating formal three-dimensional concepts of sculpture as they apply to material or combinations of materials. The student has his choice of working in depth in such materials as cast bronze, cast cement, direct plaster, direct cement, fire clay, welding metal, stone, and wood.

778ABC. Construction Composition — Advanced Techniques in Metalcasting. 5 hours each.

Prerequisite: Two senior division courses in sculpture, permission of department.

The production of wax models, venting, investing, casting, chasing and mounting of finished work will provide the student with an opportunity to carry on independent experimentation and study within the medium of cast bronze sculpture.

780. (DRA/MUS) Arts Development in the Contemporary Community. 5 hours.

See DRA 780.

789. Interior Design. 5 hours.

Prerequisite: Three senior division courses in interior design.

An investigation into the problems of the planning of architectural spaces for public and residential uses. Research studies will be made into the disposition of space, type of historical or contemporary decorative treatments, types of equipment and furnishings, materials and color coordination. Problems and readings.

790. Interior Design. 5 hours.

Prerequisite: Three senior division courses in interior design.

Investigation into the designing of special equipment: furniture, built-in equipment, special lighting, and custom design. Special

emphasis on research into historical procedure in design and construction.

791. Interior Design. 5 hours.

Prerequisite: Three senior division courses in interior design.

Individual creative problems or coordination of all aspects of interiors from original concept to completed finished drawings and presentations of material schedules.

792. Procedures in Interior Design. 5 hours.

Prerequisite: Permission of department.

Procedures and ethical practices of interior design execution, designer-client relations, presentation of drawings, pricing, wholesale buying, trade showrooms and preparation of various types of contracts. Studies will be made of the qualitative aesthetic values as they relate to monetary values in the preparation of plans for various types of contract work.

798ABC. Independent Study in Major Studio Area. 5 hours each.

Prerequisite: Permission of department.

A course designed for the graduate student to pursue individual studio projects in art, emphasizing investigation of specific problems under the direction of his/her major professor or under the direction of a professor approved by his/her major professor.

800, 801. General Art. 5 hours each.

Prerequisite: Permission of department.

A course designed for the graduate student to pursue individual projects in art. Should not be taken until after ART 798ABC numbers have been used.

804. Drawing and Composition. 5 hours.

Prerequisite: ART 703, permission of department.

Advanced study of the relationship of principles to picture structure. Readings in the fields of art history and analysis.

810. Graduate Seminar in Art. 5 hours.

A seminar providing an intensive introduction to advanced research information and techniques for the visual arts which will give bases for the determination and evaluation of graduate programs and thesis problems in conformity with the ideals of broad academic and technical concepts.

815. Philosophy of the Visual Arts. 5 hours.

Prerequisite: Two senior division art courses or the equivalent.

An examination of the functions of painting, sculpture, architecture and the applied arts and the relevance to the arts of the theories of such thinkers as Freud, Marx, William Morris,

Ortegay Gasset, Lewis Mumford, and John Dewey.

816. The Creative Consciousness. 5 hours.

Prerequisite: Permission of department.

A study of the creative mind and plastic expression in terms of the artist's response to the phenomenological world, and his response to the inner imaginative processes of his own psyche.

833. Painting. 5 hours.

Prerequisite: Permission of department.

A comparative study of theories pertaining to the means in painting as they relate to the painting act. Readings in the fields of art criticism and aesthetics.

856. Modern Architecture and its Theoretical Basis. 5 hours.

Prerequisite: Two senior division courses in art history.

Reports and discussions of the contributions of outstanding pioneers to the development of modern architecture. Attention will be given to such leaders of the modern architectural movement as Sullivan and Wright in the United States, and Gropius, Mies van der Rohe and LeCorbusier in Europe. The architectural theory will be studied against a background of the actual architecture of these men.

858ABCD. Seminar in Renaissance Art. 5 hours each.

Prerequisite: Permission of department.

This course focuses on problems in European art during the Renaissance. The subject will vary, but may include topics oriented toward a single major figure, or a genre, or a school. Problems chosen for study concern one of the major branches of art history, e.g., connoisseurship or iconography.

860ABCD. Seminar in Italian Baroque Art. 5 hours each.

This course will focus on a single Italian Baroque artist such as Caravaggio, Bernini, or Tiepolo, or on a regional school such as the Venetian Settecento. Selected works of art by the artist or school chosen for study, and the relevant literature, provide the raw materials for training in how to solve art historical problems using techniques developed in areas such as connoisseurship, iconography, iconology, and source material interpretation.

869. (PSY) A Psychological Approach to Eroticism in Art. 5 hours.

See PSY 869.

870AB. Seminar in Greco-Roman Art. 5 hours each. (Max. 10 hrs.)

Prerequisite: Graduate status in art, classics or history.

This course will focus on a single genre of Greco-Roman art from a limited time frame (e.g. freestanding Greek sculpture from the 6th Century B.C.), or on a single aspect (e.g. Roman historical reliefs). Areas of certain knowledge and speculation will be investigated.

880ABCD. Special Problems in History of Art. 5 hours each. (Max. 20 hours.)

Prerequisite: Permission of department.

Individual research and group presentation and discussion of specific problems in the history of art.

889. Origins of Modern Art. 5 hours.

Prerequisite: Two senior division art history courses.

Problems in what constitutes the modern, from its inception in Goya and the revolutionary generation to its emergence in the generation of Cezanne.

GL put accent on Cezanne.

890. Objectives of 20th Century Art. 5 hours.

Prerequisite: ART 889 or permission of department.

A consideration of painting and sculpture today against its historical background, with the purpose of illustrating the links between characteristic contemporary expressions and the work of the past accepted as belonging to the Central Western tradition. A reading seminar related to lectures.

898A. Reading and Seminar in the Visual Arts of Modern Europe. 5 hours each.

Prerequisite: Advanced graduate standing in art history or European history studies.

A study through assigned readings and seminar reports of statements by artists, critics, scholars and public officials related to art exhibitions, schools and movements in modern Europe.

899C. Reading and Seminar in the Visual Arts of United States. 5 hours each.

Prerequisite: Advanced graduate standing in art history or American studies.

A study through assigned readings and seminar reports of statements by artists, critics, scholars and public officials related to art exhibitions, schools and movements in the United States.

921. Art Problems. 5 hours. (Max. 20 hours.)

Prerequisite: Admission to candidacy for M.F.A. degree in art.

Project of original creative works of high professional standards, together with a written

report in which use is made of photographs or drawings or both. The student will be required to present a comprehensive exhibition of his graduate creative work.

930. Thesis. 1-15 hours.

AVIAN MEDICINE (AM)

Oscar J. Fletcher
(Poultry Disease Research Center, College
Station Road)

The Master of Avian Medicine is designed to provide veterinarians with specialized training in the diagnosis, treatment and prevention of poultry diseases. The degree is open to students who hold the Doctor of Veterinary Medicine degree. Details of this program may be found on page 41.

614. Avian Necropsy. 5 hours.

Prerequisite: DVM or equivalent degree and/or permission of department.

Necropsy and supportive diagnostic laboratory procedures are used to establish diagnoses of avian diseases. Various therapeutic and prophylactic measures which might be applied are discussed and appropriate recommendations for clients are determined. Problem-oriented medical records are maintained for discussion and audit.

615. Avian Preventive Medicine. 5 hours.

Prerequisite: DVM or equivalent degree and/or permission of department.

Avian diseases are studied and evaluated under field conditions. Various problem-solving approaches are considered. Appropriate supportive laboratory procedures are done, results considered, and recommendations for treatment, control, and prevention are made.

805. Avian Virus Diseases. 5 hours.

Prerequisite: MMB 405 or permission of department.

A study of the serological and virological methods used to isolate and identify avian viruses of economic importance. Cell culture systems are prepared and infected with different viruses to observe their effect. Specific projects are undertaken to familiarize the student with current virological techniques.

809. Poultry Diseases and Parasites. 5 hours.

Prerequisite: Permission of department.

An intensive course in poultry disease diagno-

sis. Various diseases will be studied, using cases sent in from the field as materials, and the development of skill in the use of laboratory diagnostic techniques will be emphasized. (Fall quarter in conjunction with AM/PS 373; Spring quarter)

811. Problems in Poultry Diseases and Parasites. 5 hours.

Prerequisite: Permission of department.

This course allows students to work intensively on approved problems after selection of the specialized area with the appropriate staff member.

815ABC. Avian Medicine Seminar. 1 hour each.

Presentation and discussion of current diagnostic cases including clinical history, gross necropsy findings, laboratory data, histopathology, diagnostic possibilities, and case management. Current research activities will also be presented and discussed.

822. (VPP) Microscopic Pathology of Poultry. 5 hours.

See VPP 822.

BIOCHEMISTRY (BCH)

H.D. Peck

*Boyd Graduate Studies Building, South
Campus)*

The Department of Biochemistry is one of six departments comprising the Division of Biological Sciences in the Franklin College of Arts and Sciences. It functions largely as a graduate department with programs of study leading to the MS and PhD degrees. Facilities for graduate training include the research equipment in the department, since the MS and PhD are awarded for research performed. There are 10 large research laboratories for biochemistry in the Graduate Studies Building, a \$6.5 million facility completed in 1968. Two other research laboratories are located in a nearby building which also houses a fermentation plant, with facilities for the large-scale production and processing of microorganisms. Animal quarters are located in the Graduate Studies Building. Access to modern greenhouses and growth chambers give the department facilities to work with any type organism.

The research laboratories are equipped with most of the specialized equipment required for modern biochemical research and includes automatic amino acid analyzers, analytical and preparative ultracentrifuges, liquid scintillation counters, recording spectrophotometers, spectrofluorimeters and stopped-flow devices, an electron paramagnetic resonance spectrometer, mass spectrometer, sequenator, HPLC and other specialized equipment.

Graduate students are normally admitted at the beginning of fall quarter, but in special cases a student may be admitted in January, March, or June. Deadline for most fellowships and assistantships is February 15, but certain others are awarded at other times.

In addition to the courses listed below, a number of the interdisciplinary courses such as Nucleic Acids (MPG/BOT 892) are normally taken by interested students in the biochemistry graduate program. The listings in biology, botany, genetics, microbiology and zoology should be consulted to determine the range of

courses available to graduate students majoring in biochemistry. No foreign language is required for the master's or doctoral degree.

601. Intermediate Biochemistry. 5 hours.

Prerequisite: BCH/BIO 310 or permission of department.

An intermediate-level course in general biochemistry which stresses the physical and chemical properties of biological molecules. This course will not serve as a prerequisite for advanced subject matter specialty courses in biochemistry. (ex. BCH 806-Enzymology).

602. Intermediate Biochemistry. 5 hours.

Prerequisite: BCH 401/601.

An intermediate-level course in general biochemistry which stresses intermediary metabolism. This course will not serve as a prerequisite for advanced subject matter specialty courses in biochemistry. (ex. BCH 806-Enzymology).

603. Laboratory Techniques in Biochemistry.

5 hours. One lecture and four 3-hour lab periods.

Prerequisite: BCH/BIO 310 or BCH 401/601.

A course designed to acquaint the student with basic techniques in biochemistry, to include enzyme assay and purification, nucleic acid purification and characterization, chromatography, spectrophotometry, and other modern techniques.

610. General Biochemistry. 5 hours.

Prerequisite: CHM 341 or equivalent.

A beginning graduate level course in biochemistry for students requiring an intensive one quarter theory course as a background for applied courses in the life sciences.

801. Advanced Biochemistry. 5 hours.

Prerequisite: CHM 341 or equivalent.

An advanced course in general biochemistry designed to acquaint the student with the chemistry of essential cell constituents emphasizing aspects of importance in metabolism.

802. Advanced Biochemistry. 5 hours.

Prerequisite: BCH 801.

An advanced study of the intermediary metabolism of carbohydrates, fats and amino acids including the biosynthesis and function of proteins and nucleic acids.

804. Phytochemistry. 5 hours.

Prerequisite: BCH 802 and one course in botany.

A course emphasizing autotrophic aspects of plant metabolism, photosynthesis, nitrogen fixation, and integration with unique metabolic pathways in plants.

805. Biochemistry of Macromolecules. 5 hours.

Prerequisite: BCH 802 and two courses in physical chemistry.

A study of the chemical and physical principles employed in the study of macromolecules of biological importance.

806. Enzymology. 5 hours.

Prerequisite: BCH 802.

A study of enzyme kinetics, multi-enzyme systems, and the structure, regulation and biosynthesis of enzymes.

807. Advanced Enzymology. 5 hours.

Prerequisite: BCH 806.

A course stressing advanced theory in enzymology to include computer techniques in enzyme kinetics, rapid reaction kinetic analysis, determination of enzyme structure, active site analysis of enzymes, coenzyme function, and related topics.

808. Biochemical Research Techniques. 5 hours.

Prerequisite: BCH 802 and permission of department.

A course designed to acquaint the advanced student with research techniques used in biochemistry, including techniques for isolation, identification and analysis of biological compounds.

810. Biochemistry Seminar. 1-8 hours.

Prerequisite: Permission of department.

811. Cell and Molecular Biochemistry. 3 hours.

Prerequisite: BCH 801 and 802.

This course covers biochemistry of the structure, biosynthesis, assembly and function of the structural, architectural and cell-surface proteins of eucaryotic cells.

812A. Special Topics in Biochemistry. 3 hours.
Prerequisite: Permission of department.

814. Introduction to Research in Biochemistry. 5 hours. Three lectures and two library or lab periods.

Prerequisite: Permission of department.

A course designed to acquaint the incoming student with biochemical laboratory, computer, and library facilities.

824. Lipid Biochemistry. 5 hours.

Prerequisite: BCH 802 or permission of department.

A study of the comparative biochemistry of the major classes of lipids including the fatty acids, steroids and sterol esters, glycerides, phospholipids, cerebrosides, sulfolipids, and lipoproteins.

826. Mammalian Biochemistry. 5 hours.

Prerequisite: BCH 802.

A course designed to acquaint the advanced student with the biochemical reaction unique or of extreme importance in mammals. These include blood chemistry, hormonal effects, urine metabolism, mineral metabolism, digestion, and other biochemical reactions important in this group of animals.

830. Biochemistry of Reproduction. 5 hours.

Prerequisite: BCH 802 or permission of department.

A study of the biochemical events which influence the process of mammalian reproduction.

900. Laboratory Research in Biochemistry. 5-50 hours.

Prerequisite: Permission of department.

901. Problems in Biochemistry. 1-15 hours.

Prerequisite: Permission of department.

930. Thesis. 1-15 hours.

BIOLOGICAL SCIENCES (BIO)

(Biological Sciences Building, South Campus)

The Division consists of the Departments of Biochemistry, Botany, Entomology, Microbiology, Molecular and Population Genetics and Zoology. Degrees are granted only through the departments.

656. (PSY) Sensory Systems. 5 hours.

See PSY 656.

701. Theory of Electron Microscopy. 3 hours.

Prerequisite: BIO 102 or equivalent, 3 quarters of Introductory Chemistry, 3 quarters of Introductory Physics, and/or permission of department.

Instrument theory and theory of specimen preparation with emphasis on transmission electron microscopy. Fundamentals of scanning electron microscopy.

703. (VAR) Electron Microscopy Laboratory. 2 hours. Two 3-hour labs.

Corequisite: BIO 501/701.

Preparation and examination of specimens using ultramicrotomy, metal shadowing and other basic methods for preparing specimens primarily for transmission electron microscopy. Limited introduction to techniques used in scanning electron microscopy.

800. Tropical Biology: An Ecological Approach. 12 hours.

Prerequisite: Graduate standing in one of the biological sciences; at least one course each in botany, zoology and general ecology. Given in Costa Rica February-March and July-August by Organization for Tropical Studies. Introduction to biological concepts in the tropics through intensive field study. Applications required usually before November 1 and December 1.

BOTANY (BOT)

Gary Kochert

(Plant Sciences Building, South Campus)

Graduate work leading to the MS or PhD degree in botany may be undertaken by qualified students. Within specifications set by the Graduate School (see General Degrees), all degree requirements are determined by the major professor and student in consultation with an advisory committee, including whether to require any foreign languages. Inquiries by prospective students should be addressed to: Coordinator of Graduate Studies, Department of Botany. He will advise you of available financial assistance.

Facilities for graduate training in botany include greenhouses, growth chambers, field plots, a herbarium, electron microscopes, mini-computer system, a histochemical and cytochemical laboratory, and a facility for the study of the molecular aspects of plant growth and development. Students planning careers in modern plant science are encouraged to take courses in other areas of biology and related plant science departments. Research opportunities are also offered in the University Computer Center, the Electron Microscopy Laboratory, and the Institute of Ecology.

Field work may be done at the university marine laboratory at Sapelo or Skidaway Island, Savannah River Ecology Laboratory, and several inland sites ranging from the coastal plains to the Blue Ridge mountains.

610. Biology of the Algae. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BIO 101 and 102, 111 and 112 or BOT 121 and 122.

Algal phylogeny, taxonomy, cytology, reproduction, and ecological relationships. Emphasis on the organismal biology of algae. Laboratories will concentrate on examination of living materials and will include methods for the isolation and culture of algae.

620. (PAT) Introductory Mycology. 5 hours.
See PAT 620.

623. Plant Anatomy. 5 hours.

Prerequisite: BIO 102 or 122 or BIO 112 and

340 or equivalent and permission of department.

Structure and growth of meristems; development and structure of cells, tissues, and tissue systems; comparative anatomy of stems, roots, leaves, flowers, and fruits; survey of recent advances in study of growth and development of form with emphasis on experimental approaches. Assumes elementary knowledge of cell and tissue structure. (Fall quarter.)

625. Biology of Secondary Plant Products. 5 hours.

Prerequisite: BOT 122, CHM 241-241L or permission of department.

An examination of the role of secondary plant metabolites such as alkaloids, terpenes and pigments on the relationships and interactions among plants and between plants and animals. (Spring quarter.)

631. Morphology of the Vascular Plants. 5 hours. Three 1-hour lectures and two 2-hour lab periods.

Prerequisite: BIO 101 and 102, 111 and 112 or BOT 121 and 122.

A survey of the organographic diversity in vascular plants including principles of structural organization and major evolutionary trends. Course is strongly laboratory oriented with emphasis on first-hand examination of living material. (Winter quarter of even numbered years.)

635. Biochemical Systematics. 5 hours. Three 1-hour lectures and two 2-hour labs.

Prerequisite: BOT 121, 122, CHM 240-241.

Application of natural product chemistry and biochemistry to problems in plant systematics. Laboratory will present general screening procedures for selected classes of natural products commonly used in plant systematics. (Winter quarter of even numbered years.)

640. Plant Cell Biology. 5 hours. Three 1-hour lectures, one 2-hour lab and one 2-hour discussion session.

Prerequisite: CHM 240, 241 and BIO 101, 102 or 111, 112 or BOT 121, 122.

The study of the relationship between structure and function, from the organelle level to cell, tissue and organ interactions. The relationship between environment, structure and function is also considered. Lab: Advanced optical and analytical techniques to examine plant cells are studied. (Spring quarter.)

665. Plant Taxonomy. 5 hours. Three 1-hour lectures and two 2-hour lab periods. Weekend field trips.

Prerequisite: BIO 101, 102 or BOT 121, 122.

History of taxonomy, nomenclature, characters, identification principles, classification, taxonomic relationships, taxonomic literature, species biology, collecting and herbarium, floristic studies. (Spring and Summer quarters.)

671. Principles of Plant Systematics. 5 hours. Three 1-hour lectures and two 2-hour lab periods. Weekend field trips.

Prerequisite: BIO 101 and 102 or BOT 121 and 122.

Principles of systematics, principles of nomenclature, concepts of rank and taxa, characterization and description, problem design, analytical procedures, data presentation, identification of special groups, classification, phylogenetic relationships, polymorphism, literature and bibliographic aids. Labs: Morphology and arrangement of selected phylogenetically significant families; preparation of a revision of small genus or species complex. (Fall quarter of even numbered years.)

672. Variation and Evolution in Plants. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BIO 101 and 102, or BOT 121 and 122; a course in genetics or cytology would be useful but not required.

Processes and mechanisms of variation and evolution, genotypic and phenotypic patterns, chemosystematics, adaptation, breeding systems, polyploidy, hybridization, apomixis, polymorphisms, use of evolutionary data taxonomically, literature, experimental design, population sampling. Variation analysis, breeding techniques, data presentation, population analysis, cytotoxicomic techniques, scanning electron microscope. (Spring quarter of even numbered years.)

673. Taxonomy of Grasses, Sedges, and Rushes. 5 hours. Two 2-hour lectures and three 2-hour lab periods. Weekend field trips.

Prerequisite: BOT 465/665 or permission of department.

Identification of grasses, sedges and rushes, systematics and economic importance of grasses, recognition of the economically important grasses of the Southeast. Labs: Morphology, identification, a collection will be required. (Fall quarter of odd numbered year.)

676. (GGY) Plant Geography. 5 hours. Five lectures.

Prerequisite: 15 hours in botany, geology, and geography, or agriculture including a course in ecology.

Theories of plant geography, climax formations, and the causes of contemporary vegeta-

tion. Includes floristics, environmental relations, system structure and function, indicator plants and problems in land utilization. Emphasis on the North American flora.

677. Community Ecology. 5 hours. Three lectures and two lab periods.

Prerequisite: BIO 350 or permission of department.

The study of community structure, classification, distribution and development. (Fall quarter.)

683. Plant Physiology. 5 hours. Three lectures and one triple lab period.

Prerequisite: BIO/BCH 310 or equivalent.

Plant physiology for students with cell physiology or biochemistry background. Water relations, mineral nutrition, transport of materials, respiration, photosynthesis, growth and development. (Fall quarter.)

802. Introduction to Botanical Research. 1-5 hours. Three lectures and two library or lab periods.

Prerequisite: Permission of department.

A course to acquaint the incoming student with the breadth of current botanical research and with the facilities available for botanical research. (Fall quarter.)

805. Terrestrial Biogeochemical Cycling. 5 hours. Two 1-hour lectures and two 3-hour labs.

Prerequisite: BIO 350, STA 421/621, 422/622, and permission of department.

Examination of plant processes which mediate biogeochemical cycling on land. Includes survey of global element cycling, functions of essential elements, element acquisition, translocation and loss by plants, litter decomposition, and methods of estimating standing stocks of elements in and transfer rates of elements between ecosystem components. (Spring quarter of odd numbered years.)

806. Advances in Plant Chemosystematics. 5 hours. Three 1-hour lectures and two 2-hour labs.

Prerequisite: BOT 121-122, CHM 240-241 or permission of department.

A study of the latest techniques and classes of plant natural products used in plant chemosystematics. (Winter quarter of odd numbered years.)

810. Quantitative Methods in Systematics. 5 hours. Three hours lecture per week and two 2-hour lab periods per week.

Prerequisite: BOT 465/665 or 471/671 or open to graduate students in systematics or permission of department.

A study of the theory and practice of analyzing systematic relationships among organisms by numerical methods. Provides experience in the use of clustering algorithms and techniques for reconstructing evolutionary history from morphological, chemical, and molecular data. Modern philosophies of classification are also covered. (Fall quarter of odd numbered years.)

812. Plant Reproductive Biology. 5 hours. Three 1-hour lectures and two 2-hour labs.

Prerequisite: 300 level course in ecology or evolution or permission of department.

Lecture-seminars include pollination ecology, breeding systems, patterns of gene flow through pollen and seed dispersal, flower arrangement and phenology, and implications of reproductive biology for demography. Labs will focus on group and individual projects. (Spring quarter of even numbered years.)

813. Algal Ecology. 5 hours. Three 1-hour lectures and one 5-hour lab.

Prerequisite: BOT 410/610 or permission of department.

Physiological ecology of algae found in various habitats including phytoplankton, benthic microalgae, seaweeds and symbiotic associations. Emphasis on experimental studies in both laboratory and field situations. (Spring quarter of odd numbered years.)

821. (PAT) Biology of Ascomycetes. 5 hours. See PAT 821.

825. Plant Molecular Biology. 5 hours. Three 1-hour lectures and library work.

Prerequisite: BIO 320 or equivalent or permission of department.

Concepts of molecular biology which are unique to plants. The plant genomes, organelle development, cell wall formation and tissue culture techniques will be studied. (Winter quarter of odd numbered years.)

832. (PAT) Biology of Phycomycetes. 5 hours. Prerequisite: BOT/PAT 420/620.

Comparative morphology of the Phycomycetes and related groups. Discussion of the physiology of growth and development in these organisms. (Fall quarter of odd numbered years.)

833. (PAT) Biology of Basidiomycetes. 5 hours. Prerequisite: BOT/PAT 420/620.

A study of the comparative morphology of the Basidiomycetes, principles of taxonomy, and training in identification. (Fall quarter of even numbered years.)

855. (ZOO) Population Ecology. 5 hours. See ZOO 855.

858. Photobiology. 5 hours. Three 1-hour lectures and library work.

Prerequisite: BCH 401/601, 402/602, PCS 229 or 239.

Interactions of light with living material; use of light as a research tool in biology; consideration of major photobiological topics with emphasis on plants, including photochemistry of photosynthesis, photomorphogenesis, bioluminescence, photomovement and photoperiodism. (Winter quarter of odd numbered years.)

870. Plant Population Biology Seminar. 1-2 hours. (Max. 16 hours.)

Prerequisite: Permission of department.

Seminar on current botanical research topics.

877. Communities and Ecosystems. 5 hours.

Prerequisite: BOT 477/677 or equivalent.

Advanced synthesis of Physiological, Population, Community and Ecosystem studies in the major terrestrial plant associations of the world. (Winter quarter of even numbered years.)

880. Plant Systematics and Evolution Seminar. 2 hours. (Max. 16 hours.)

Seminar on current botanical research topics. (Winter quarter.)

881. Lower Plants Seminar. 2 hours. (Max. 16 hours.)

Seminar on current botanical research topics. (Fall, Winter and Spring quarters.)

882. Plant Physiology Seminar. 2 hours. (Max. 16 hours.)

Seminar on current botanical research topics. (Winter quarter.)

884. Plant Ecology Seminar. 1-16 hours.

Seminar on current botanical research topics. (Fall, Winter and Spring quarters.)

886. Plant Anatomy, Morphology, and Cytology Seminar. 1-16 hours.

Seminar on current botanical research topics. (Fall, Winter and Spring quarters.)

888. Developmental Physiology. 5 hours.

Prerequisite: BOT 483/683 or permission of department.

Biochemistry of plant hormones, levels of development, polarity (cellular and inter-cellular), photomorphogenesis, environmental responses, and wound responses. (Winter quarter of odd numbered years.)

889. Environmental Physiology. 5 hours. Four hours lecture and one 3-hour lab period.

Prerequisite: BOT 483/683 or permission of department.

Energy balances, water relations, stomatal physiology, gas exchange, environmental aspects of mineral nutrition, stress physiology, and productivity. (Fall quarter.)

892. (MPG) Nucleic Acids. 5 hours.

See MPG 892.

900. Research in Botany. 1-12 hours. (Max. 100 hours.)

Prerequisite: Permission of department.

Research projects under the direction of staff members. (Maximum credit 100 hours with no more than 12 hours credit with grade toward any one degree.)

930. Thesis. 1-15 hours.

BUSINESS ADMINISTRA- TION

William R. Boulton
(R. Preston Brooks Business Administration
Building, North Campus)

Seven graduate degree programs are offered by the College of Business Administration: the Master of Business Administration, Master of Accountancy, Master of Marketing Research, Master of Arts in business administration and in economics, and Doctor of Philosophy in business administration and in economics. The MBA and MAcc degrees lead to professional and managerial careers. The MA programs are used for intensive specialization or as a path to the PhD. The PhD programs lead to research and/or teaching careers.

The one-year MBA program admits students in the summer only. The two-year MBA program and the MMR program admit students in the fall only. All other programs in the College of Business Administration admit students quarterly.

The MBA degree requires two years for students without undergraduate preparation in business administration and one year for students entering with the undergraduate equivalent of a BBA. Broadly speaking, the MBA program provides a mixture of practical and theoretical studies to prepare the student to become a first-rate managerial problem-solver in either the private or the public sector. Through its curriculum and faculty research, the program exposes the student to the thought processes necessary to fulfill important business roles in a rapidly changing environment.

The program's basic objectives are:

1. To provide a basic analytical tool kit for management, including fundamental concepts and principles from the various management disciplines, and an understanding of the major institutions in business and government.
2. To develop skill in using these tools in an imaginative, orderly, problem-solving capacity.
3. To advance the ability to make and carry out decisions.

4. To develop a basis for dealing effectively with others, in person and in writing.
5. To encourage continuous learning from experience.
6. To instill a thorough understanding of today's economic, political, and social environment.

These objectives are central to the curriculum design, faculty selection and promotion, and to the commitment of resources to new programs and research efforts. But the most important function is to provide a foundation upon which to build and grow, one which is sufficiently general to be relevant to a broad range of contexts.

A full course of study consists of 98 quarter hours; up to 32 quarter hours of advanced standing may be granted by appropriate undergraduate work. The first year may be waived with an AACSB-accredited BBA. A calculus course is a prerequisite for entrance.

The first year consists of 50 quarter hours of core course work. These courses introduce tools, concepts, and techniques for managerial decision making in the basic areas of business. Courses include business statistics, economic and legal environment of business, marketing economic analysis, and organizational behavior. The second year consists of 48 quarter hours of business policy and electives.

The one-year MBA consists of 64 quarter hours. Sixteen hours of required core courses are taken during the first quarter. During the rest of the year, the student will take eleven electives and a business policy course.

While the entire MBA program is concerned with the development of general managers, the capstone course, Business Policy, emphasizes top management perspective.

The student may take two courses not offered exclusively for graduate credit. Five hours may be taken outside the College of Business Administration in a related area. Details of the program may be found on page 41.

The MAcc program is designed to prepare students for professional careers in financial accounting, public sector accounting, auditing, managerial accounting and controllership, information systems, or taxation. Students usually commence this program after having earned a baccalaureate degree. However, the program may be entered at the beginning of the senior year, in which case the student will earn both a baccalaureate and master's degree. The program involves 46 quarter hours beyond the common-body-of-knowledge

courses and an accounting foundation. Details of the program may be found on page 39.

The MA programs enable students to secure a working knowledge in business administration or economics. After satisfying undergraduate foundation requirements, the student, counseled by a major professor, designs a program of 40 quarter hours built around a research field. The thesis and course work represent an integrated program of study. Master of Arts majors are offered in accounting, economics, finance, management, marketing, quantitative business analysis, real estate, risk management and insurance.

The PhD programs provide a background for careers in government, business, academia, and research. The doctoral program is individually planned for each student by the major professor and advisory committee. There is no foreign language requirement. Students in the PhD in Business Administration develop a high level of competency in a major field of business, a supporting discipline outside of business (such as economics, psychology, or sociology), and a research methodology. In addition, all students must have the knowledge of mathematics through differential and integral calculus. Programs leading to the PhD in Business Administration are offered in:

- Accounting
- Business Finance
- Management Policy and Systems
- Management Sciences
- Marketing
- Organizational Behavior
- Real Estate
- Risk Management and Insurance

The PhD in Economics is offered with emphasis on microeconomic theory, macroeconomic theory, and two of the following fields:

- Agricultural Economics
- Business Conditions Analysis
- Corporate Finance
- Econometrics
- Economic Development
- Economic History
- Industrial Organization
- History of Economic Thought
- International Economics
- Labor and Manpower Economics
- Managerial Economics
- Monetary Economics
- Public Finance

In addition, all students must have the knowledge of differential, integral, multi-variable, and introductory vector calculus.

ACCOUNTING (ACC)

710. Managerial I. 5 hours.

Prerequisite: ACC 110 and 111.

Emphasis is upon utilization of cost data in planning and controlling activities. Internal and external data are woven into the planning models. Specific areas are: process, job order, standard, functional relationships, and budgeting.

720. Auditing I. 5 hours.

Prerequisite: ACC 530/730 and MS 312.

An in-depth review of the profession's auditing standards and of the steps involved in (1) planning the audit, (2) reviewing the system of internal control, (3) performing substantive auditing procedures, and (4) writing audit reports. Emphasis is placed on statistical sampling and auditing computerized systems. An overview of SEC regulations is provided.

730. Systems I. 5 hours.

Prerequisite: MS 209 and ACC 111 or 113H or permission of department.

This course is designed to expose students to electronic data processing, COBOL programming, file maintenance data structure, transactions flow, systems analysis, and systems control.

740. Tax I. 5 hours.

Prerequisite: ACC 111 or 113H or 799F.

A basic federal income tax course, involving a study of history and background, general concepts of taxation, income, deductions, and federal income taxation primarily relating to individuals. This course is designed for accounting majors to emphasize the application of technical rules to factual situations such as those typically encountered by an accountant.

741. Tax II. 5 hours.

Prerequisite: ACC 540/740.

A continuation of ACC 740. Includes the study of income tax laws applicable to corporations, subchapter S corporations, partnerships, estates, trusts, and an introduction to social security taxes and estate and gift taxes, and tax research methodology.

742. Tax III. 5 hours.

Prerequisite: ACC 540/740.

Selected sections of the Internal Revenue code, primarily dealing with corporations, are used to emphasize tax planning and research. Limited treatment of estate planning is given.

780. Internship and/or Cooperative Education. 1-15 hours.

Prerequisite: Permission of department.

Students are permitted to enter business

establishments, accounting firms, and governmental agencies for the purpose of obtaining practical and applied business and professional experience. A paper describing and analyzing this experience is required. (School approval required.)

790. Public Sector I. 5 hours.

Prerequisite: ACC 502.

Accounting problems and procedures pertaining to state and local governments and their institutions; governmental classification of receipts and expenditures; preparation of reports; budgeting and fund accounting.

799F. Principles of Accounting. 5 hours.

An introduction to the collection of business data, to the preparation and interpretation of financial statements, and to the limitations inherent in them. An introduction to cost accounting techniques and preparation of information for managerial decision-making.

800. Financial Accounting IV. 4 hours.

Prerequisite: ACC 502.

A continuation of ACC 502 covering business combinations, consolidations, partnerships, branch operations and replacement cost.

801. Theory I. 4 hours.

Prerequisite: ACC 502.

Examination of the development of accounting theory, policy, and institutions. Emphasis is placed upon the objectives of financial reporting and the conceptual framework for income measurement. Some attention is given to the substantive issues involved in contemporary problems. Students prepare responses for FASB Discussion Memorandums and Exposure Drafts.

802. Problem Analysis. 4 hours.

Prerequisite: ACC 502.

A problem-analysis course designed to enhance analytical skills and teach students how to research and select authoritative support for their solutions. Case material may be used on a selective basis.

810. Managerial II. 4 hours.

Prerequisite: ACC 510/710.

A major emphasis of this course is the application of cost accounting techniques to "real world" problems, so that the student can learn the difficulties and complexities involved in using the cost accounting techniques learned in this course and previous managerial accounting courses.

811. Managerial III. 4 hours.

Prerequisite: ACC 810 and MS 800 or equivalent.

This course provides an opportunity for stu-

dents interested in management accounting to explore practical problems encountered in applying mathematical models to real world problems.

814. Accounting and Information Systems. 5 hours.

Prerequisite: ACC 111 or equivalent.

Managerial accounting, planning and control. Cost behavior, costing methods, standards, flexible budgets. Responsibility accounting and the contribution approach. Economic evaluation of alternatives; relevant cost analysis for problem solving. Evaluation of segmental performance in multi-unit enterprises. Transfer pricing. (Not open to MAcc students.)

820. Auditing II. 4 hours.

Prerequisite: ACC 520/720.

Practice cases are used to give the student practical experience in auditing concepts covered in ACC 720. Students are required to compute a practice case. A series of cases are assigned in which a specific problem is addressed requiring the student to research and write a report detailing the solution.

830. Systems II. 4 hours.

Prerequisite: ACC 530/730 or equivalent.

To develop an understanding of and an appreciation for financial information systems, design and control, with an emphasis on electronic data processing systems.

831. Systems III. 4 hours.

Prerequisite: ACC 810, 830, MS 800, or equivalent.

An in-depth examination of particular financial information systems. Emphasis is placed on current developments in the area.

841. Tax IV. 4 hours.

Prerequisite: ACC 542/742 or permission of department.

A detailed study of tax problems of corporations and their shareholders.

842. Tax V. 4 hours.

Prerequisite: ACC 542/742 or permission of department.

This course involves an examination of fundamental legal concepts, technical rules, and computational procedures relating to federal taxation of partnerships and partners. Areas of emphasis include partnership formation, operations, and termination. Additional topics covered include changes in partner ownership, family partnerships, and limited partnerships.

843. Tax VI. 4 hours.

Prerequisite: ACC 542/742 or permission of department.

This course should be taken last in the tax sequence. Emphasis on role of accountant in life-time planning and administration of estates.

844. Tax VII. 4 hours.

Prerequisite: ACC 542/742 or permission of department.

An examination of the fundamental legal concepts, technical rules, and computational procedures relating to federal taxation of corporations and shareholders. Areas of emphasis include corporate reorganizations, Subchapter S corporation, and the filing of consolidated tax returns.

845. Tax VIII. 4 hours.

Prerequisite: ACC 542/742 or permission of department.

An examination of the fundamental legal concepts, technical rules, and computational procedures relating to current developments in taxation. Topics covered may include, but are not limited to, multinational taxation, deferred compensation, employment taxation, and state and local taxation.

849. Tax Implications in Management Decisions. 5 hours.

Prerequisite: ACC 799F.

Furnish the potential manager with an understanding of selected provisions of federal income and estate taxation relevant in making business decisions. (Not open to MAcc students.)

871. Professional Accounting. 3 hours.

Ethics, responsibility and liability of accountant.

872. Accounting Policy. 3 hours.

An analytical examination of the broad policy issues facing accountants in all areas of society. An integration of the functional fields of business and the component areas of accounting.

882. Contemporary Profession Issues. 4 hours.

Emerging topics and issues in professional accounting.

890. Public Sector II. 4 hours.

Prerequisite: ACC 590/790.

An intensive study of public sector accounting and auditing for students who plan careers in the public sector or who desire to become specialists in the public sector area with public accounting firms.

893. Public Sector Accounting for Non-Accountants. 5 hours.

A survey of governmental and other public sector accounting for non-business majors. Topics covered will include an introduction to accounting, budgeting, state and local government accounting, and accounting for the Federal government, public schools, colleges and universities, hospitals, auditing and cost determination.

899. Directed Study in Accounting. 1-15 hours.

Prerequisite: Permission of department.

Directed study or research in the area of accounting.

900. Research Methodology in Accounting. 2-5 hours.

Prerequisite: Doctoral students only.

This seminar is designed to assist the candidate in identifying, describing, and illustrating the various methodological approaches which are appropriate for research. Methodologies in accounting research will be examined. Applications of these methodologies will be examined by analysis and study of the contributions of major research efforts with the intent of understanding both the research approach and the results of the research.

901. Management Accounting Research Seminar. 2-5 hours.

Prerequisite: ACC 810 and 900 plus research methodology course work (other than ACC 900) taken concurrently with or prior to ACC 901.

This seminar is an in-depth review of selected research in management accounting. The research will be examined from a theoretical and methodological perspective. The intent will be to familiarize students with current and classical research and to build a base for the student's own research.

902. Financial Accounting Research Seminar. 2-5 hours.

Prerequisite: ACC 801 and 900 plus research methodology course work (other than ACC 900) taken concurrently with or prior to ACC 902.

This seminar is an in-depth review of selected research in financial accounting. It will include theory, efficient market research, and income theory. Current and classical research will be examined along with appropriate research methodology.

903. Auditing Research Seminar. 2-5 hours.

Prerequisite: ACC 820 and 900 plus research methodology course work (other than ACC 900) taken concurrently with or prior to ACC 903.

This seminar is an in-depth review of selected auditing research and auditing research methodologies. Special attention will be given to current audit practice issues where future research might be useful.

904. Information Economics and Decision Theory Seminar. 2-5 hours.

Prerequisite: ACC 830 and 900 plus research methodology course work (other than ACC 900) taken concurrently with or prior to ACC 904.

This seminar is an in-depth review of selected topics in the application of information economics and decision theory to accounting issues. Various economic, systems, decision making, communication, and utility theories will be examined.

905. Tax Research Seminar. 2-5 hours.

Prerequisite: ACC 740 and 900 plus research methodology course work (other than ACC 900) taken concurrently with or prior to ACC 905.

This seminar provides an appreciation of how taxation fits into modern society through historical perspective and explores directions for the future. It includes an in-depth investigation into research issues, methodologies, and opportunities in taxation.

906. Governmental Accounting Research Seminar. 2-5 hours.

Prerequisite: ACC 790 and 890 and 900 or permission of department plus research methodology course work (other than ACC 900) taken concurrently with or prior to ACC 906.

This seminar is an in-depth review of research in governmental and nonprofit accounting. The research will be studied in an effort to build a basis for the student's own research by introducing the literature, studying appropriate methodologies, and proposal development.

930. Thesis. 1-15 hours.

BANKING AND FINANCE (FIN)

681. International Finance: Theory and Policy. 5 hours.

Balance of payments analysis, international equilibrium and the mechanism of adjustment, international money markets and monetary standards, capital movements and the objectives of international monetary policy and international corporate finance.

687. (AEC) Commodity Markets. 5 hours.

See AEC 687.

799F. Introduction to Financial Analysis. 3 hours.

Prerequisite: ACC 799F or equivalent.

Financial markets and their functioning, working capital management, financial statement analysis and time value of money.

800. Corporate Financial Management. 5 hours.

Prerequisite: FIN 330 or 799F.

Specific topics include long-term financing, capital budgeting, theory of leverage, cost of capital and valuation, dividend policy, mergers and reorganizations.

801. Investments. 5 hours.

Prerequisite: FIN 799F or equivalent.

Examination of theories and evidence about the securities markets. Examined are classes of securities rather than specific securities, efficient markets hypotheses, the Capital Asset Pricing Model, and empirical evidence.

802. Advanced Portfolio and Capital Market Theory. 5 hours.

Prerequisite: FIN 800 or equivalent.

Comprehensive study of the theory underlying the management of portfolios consisting of securities and other types of assets. Measurement of risk and return, utility analysis, construction of optimal portfolios, capital market theory, and the evaluation of portfolio performance.

803. Security Analysis. 5 hours.

Prerequisite: FIN 799F or equivalent.

Analysis of the problems in valuing stocks of individual corporations. Statement analysis is included along with financial modeling. (This course is not available for credit for those who have credit for FIN 488.)

804. Public Finance. 5 hours.

A general consideration of American public expenditures, revenues, and fiscal administration.

808. Management of Financial Institutions. 5 hours.

Prerequisite: FIN 800 or equivalent.

Analysis of the financial management problems of financial institutions. Special attention will be devoted to commercial banks, savings institutions and pension funds.

809. Advanced Working Capital Management. 5 hours.

Prerequisite: FIN 800, or equivalent.

An intensive study of working capital management. Modern developments in the areas of cash management, credit policy, inventory policy and overall working capital management are emphasized.

811. Commercial Banking. 5 hours.

Prerequisite: FIN 326.

Theory of commercial banking and its effect on the supply of money and national income; the concept of bank asset management; the relationship of asset management to liquidity; commercial banking and the nation's credit structure.

813. State and Local Public Finance. 5 hours.

Revenues, expenditures, and fiscal administration of Georgia and its political subdivisions, fiscal comparisons of Georgia with other states; and an analysis of intergovernmental tax relationships.

815. (POL) Metropolitan Fiscal Problems. 5 hours.

Prerequisite: Permission of department.

An examination of public economy of metropolitan areas and an intensive study of selected special metropolitan fiscal problems in the areas of public expenditures, revenues and fiscal administration.

820. Monetary Policy. 5 hours.

Prerequisite: FIN 326.

Monetary theory and how it affects monetary policy: objectives; techniques, and problems involved: treasury fiscal and debit management policy as they affect and are affected by Federal Reserve policy.

830. Long-Term Financial Decisions. 5 hours.

Prerequisite: FIN 800 or equivalent.

Long-term capital investment and financing decisions, including an intensive study of risk analysis in the selection of capital investments. The cost of capital.

831. Investment Analysis. 5 hours.

Prerequisite: Permission of department.

The theory of the determination of investment values. Advanced studies of the theory of investment risk, institutional market factors, S.E.C. regulations, and economic environment.

837. (POL) Quantitative Analysis for Public Decision Making. 5 hours.

Prerequisite: MAT 204 or equivalent.

A tool course for public administration. The course involves an introduction to quantitative analysis and techniques used in planning programming budgeting systems.

850. Monetary and Banking Theory. 5 hours.

Prerequisite: FIN 326 and 450.

The development of monetary and banking theories in economic thought from David Hume to the present. Emphasis is on the implications of monetary theories as they are reflected in various demands for money.

851. Money Market Institutions. 5 hours.

A study of the flow of funds, credit instruments, role of financial institutions, and the structure of interest rates.

881. Seminar International Finance. 5 hours.

World monetary system, international money and capital markets, financing for multinational business.

899. Directed Study in Finance. 1-15 hours.

An examination of the most recent professional contributions in the various special fields of finance. Student and instructor interests determine which particular field is brought under scrutiny.

900. Research in Finance. 1-15 hours. (Max. 30 hours.)

Prerequisite: Approval of advisor or permission of department.

Independent research course on topics approved by advisor and department head.

930 Thesis. 1-15 hours.

951A. Seminar in Theory of Finance I. 5 hours. (max. 10 hrs.)

Prerequisite: Master's degree or permission of department.

Basic theory of asset valuation in perfectly competitive capital markets under conditions of certainty. The individual's optimal consumption-investment decision and its implication, the role of capital markets in smoothing consumption patterns, and the characteristics of firms that will outbid others for society's scarce resources are set forth. Irrelevance of dividends.

951B. Seminar in Theory of Finance II. 5 hours. (max. 10 hrs.)

Prerequisite: FIN 951A.

Extension of the analysis of FIN 951A into a risk and uncertainty context. Expected utility, the consumption-investment decision in a risky environment, and the impact of risk on asset values, rates of return, and the characteristics of general capital market equilibrium are studied.

955. Research Problems in Public Finance. 5 hours.

An examination of the most recent professional contributions in public finance. Student and instructor interests determine which particular field is brought into scrutiny.

BUSINESS LAW (BL)

711. (RE) Real Estate Law. 5 hours.

See RE 711.

776. Business Law II. 5 hours.

Prerequisite: BL 370 or permission of department.

Business organization, property, bankruptcy, secured transactions and commercial paper.

798F. Legal and Social Environment of Business. 5 hours.

A foundational approach to the interrelationship of law, society and business. The study of established socio-legal concepts and the investigation of the development of the rule of law in society and society under the law. Particular emphasis is placed on cases and writings involving plural concepts or categories of study.

870. Social, Political and Legal Environment of Business. 5 hours.

Prerequisite: BL 798F or equivalent.

A study of the law as it affects business, not as substantive subject matter but as a model for rational decision making. Concentration upon skill development evaluation of opposing views and alternative solutions in all problem areas.

ECONOMICS (ECN)

647. The Economics of Industrial Organization. 5 hours.

Industrial organization is a theoretical and empirical study of how structure and conduct of industries affect economic performance and public policies. Structure includes studies of concentration, barriers to entry; conduct includes analysis of pricing and product strategy; performance includes price-cost patterns, profits and technology; public policies include antitrust law.

648. Public Utilities, Regulation and Enterprise. 5 hours.

Nature, background and significance of public utilities in our economy; economic, and philosophic basis for government regulation and ownership in the public utilities sector; legal basis for and restrictions upon federal, state, and local regulatory authorities; development characteristics, rights, and duties of regulated industries; utility problems of regulation (rates, service securities).

649. Economic Analysis of Law. 5 hours.

This course will deal with the economics of law and government. The court (common law) and legislative (statute law) systems are viewed as resource allocating mechanisms which supplement or replace the market. An economic analysis of the behavior of these systems and of the output of the systems is provided; con-

sideration is given to the implications of each system for efficiency.

689. The Labor Movement. 5 hours.

Historical background of modern industrial relations; economic, social and political forces contributing to the current problems in labor economics.

690. (MAN) Labor Legislation. 5 hours.

Prerequisite: ECN 386.

An economic analysis of the problems and issues arising out of the legislative and judicial efforts to define the rights, duties and responsibilities of labor organizations and management in the field of industrial relations.

693. Industrial Relations System. 5 hours.

Prerequisite: ECN 105, 106, 386, or permission of department.

The study of the growth, development, and economic import of labor movements in selected countries.

694. Labor Market Analysis. 5 hours.

Prerequisite: ECN 386.

A presentation of current theories, recent empirical investigations, and historical and current data source materials in the area of labor supply at the local, state, regional, and national levels. The course will focus upon: (1) evaluation of the quality and quantity of the labor resource available to a labor market, (2) application of labor market data by firms and government agencies; and (3) the role of the labor resource in explaining the South's regional position in the national economic setting.

696. Managerial Economics. 5 hours.

Concepts, tools and methods of economic analysis relevant to a broad cross section of decisions within the business firm; analysis of market demand, cost relevant to various decisions; capital budgeting; and interrelationships between price policy, costs, promotion outlays, operating rates, capital budgets and financing in the short and long run.

697. Economic Evolution of the United States. 5 hours.

Economic evolution of the United States emphasizes use of tools of quantitative and qualitative analysis as applied to American economic evolution.

745. Contemporary Economics for Non-Majors I. 5 hours.

Prerequisite: Permission of department.

Employment theory. Emphasis is placed upon recent development and varying points of view in contemporary economics. May not be

counted as part of a degree program in economics or business administration.

746. Contemporary Economics for Non-Majors II. 5 hours.

Prerequisite: ECN 545/745.

Price theory. Emphasis is placed on recent developments and varying points of view in contemporary economics. May not be counted as part of a degree program in economics or business administration.

797F. Fundamentals of Economic Analysis. 5 hours.

This course will survey the fundamental concepts involved in business and industrial analysis and policy, with emphasis on alternative market structures, from both the supply and demand sides. Special emphasis is given to pure competition, monopoly, oligopoly, national income analysis, consumption, saving, investment, inflation and growth.

800. Micro-Economic Theory. 5 hours.

Prerequisite: ECN 105 and 106.

Economic theory of households and firms. Determination of equilibrium product and factor prices, allocation of resources and distribution of income.

801. Macro-Economic Theory. 5 hours.

Prerequisite: ECN 105 and 106.

National income theory and policy. Determination of income, employment, prices and interest rates.

803. Economic Growth and Development. 5 hours.

Prerequisite: Two senior division courses in economics.

Study of the problems and methods of achieving a more rapid rate of economic and social development. Specific problems in the area of population, resource endowment, entrepreneurship, and physical and human capital are considered. Strategies and methods of measuring and implementing changes to achieve "desired" objectives are stressed.

805. Advanced Economic Theory I. 5 hours.

Prerequisite: Core courses in economics.

An analysis of selected problems in micro-economic theory.

806. Advanced Economic Theory II. 5 hours.

Prerequisite: ECN 805.

An analysis of selected problems in macro-economic theory.

807, 808. The History of Economic Thought I, II. 5 hours each.

Prerequisite: Permission of department.

A review of the history of economic theory.

The evolution of the important principles of economics.

809. Advanced Economic Theory III. 5 hours.

Prerequisite: Advanced training in economic theory and permission of department.

An application of the concepts of macro- and micro-economic theory to a world of disturbance, change, and growth. Attention is given to the micro-economic foundations of employment and inflation under conditions of equilibrium and disequilibrium.

812. Advanced Microeconomic Theory. 5 hours.

Prerequisite: MAT 255 and ECN 805.

Modern general equilibrium analysis and welfare economics with an emphasis on consumer theory. Familiarity with calculus and aspects of modern mathematics (convex analysis) is assumed.

836. Seminar in Business Conditions Analysis. 5 hours.

Prerequisite: Permission of department.

Study of recent developments and research in economic theory and techniques as they relate to business conditions analysis. Economic growth, short-run disturbances, adjustment processes, and questions of welfare and public policy all are viewed within the framework of a general equilibrium system.

848. Advanced Industrial Organization. 5 hours.

Prerequisite: ECN 448/648.

Advanced industrial organization topics in the field of industrial organization including the structure, conduct, and performance in relevant product and geographic markets; the nature, background, significance and issues in public policy with emphasis on federal and state public utility and antitrust regulation; technological change; industry studies; and economic capacity.

869. Mathematical Analysis for Economics. 5 hours.

Prerequisite: Permission of department.

Selected topics from differential and integral calculus of multiargument functions. Also included are those techniques of differential and difference equations required in dynamic economic models.

870. Mathematical Economics I. 5 hours.

Prerequisite: Permission of department.

Application of mathematical methods to economic theory and problems including joint supply and demand relationship, general equilibrium, cost curves and production functions.

879. International Trade: Theory and Policy. 5 hours.

Prerequisite: Permission of department.

Theoretical analysis, historical survey and current problems of international trade; an examination of international economic policies and institutions especially as they relate to national political and economic objectives; trade barriers and controls.

880. Seminar in International Trade. 5 hours.

Prerequisite: ECN 879, FIN 481/681, or equivalent and permission of department.

Advanced international trade and payments theory and the application of concepts to current problems. Special attention will be given to problems of adjustment to changing patterns of international trade and payments.

891. Research in Applied Economic Statistics. 5 hours.

Prerequisite: Permission of department.

Individual research in the application of statistical methods to economic problems.

894. Seminar in Economic History. 5 hours.

Prerequisite: Permission of department.

A seminar on selected topics in economic history. Special emphasis is placed on issues of current interest to economic historians. Included will be discussion of railroads, slavery, post-Civil War South, and the Great Depression.

895. Applied Economic Statistics. 5 hours.

Prerequisite: MS 312.

Sample design, applications of sampling theory and significance testing in economics and business, elementary analysis of variance, and multiple regression and correlations.

896. Econometric Theory I. 5 hours.

Prerequisite: ECN 895 or equivalent.

A study of advanced econometric topics. Topics covered include large and small sample properties of conventional estimators, pre-test estimators, Stein-like estimators, multicollinearity, properties of estimated generalized least squares estimators, finite and infinite distributed lags. Applications of each topic are considered.

897. Econometric Theory II. 5 hours.

Prerequisite: ECN 896 or equivalent.

A study of advanced econometric topics. Topics covered include procedures for pooling time-series and cross-sectional data, models with qualitative and limited dependent variables, errors in variables models, simultaneous equations models. Application of each topic is considered.

899. Economics Seminar. 1-15 hours.

Prerequisite: Permission of department.

A research problem in the field of major concentration under personal supervision of major professor.

900. Business Economics. 5 hours.

Prerequisite: ECN 797F or equivalent.

Economic analysis of the environment of business with emphasis on methods of business decision-making. Determinants of growth, problems in fluctuations, interdependence among sectors and management implications are considered.

930. Thesis. 1-15 hours.

990. (RE) Regional Economics. 5 hours.

See RE 990.

992. (RE) Urban Economics. 5 hours.

See RE 992.

MANAGEMENT (MAN)

656. (SPC) Group Discussion and Conference Leadership. 5 hours.

See SPC 656.

667. (SPC) Interviewing. 5 hours.

See SPC 667.

690. (ECN) Labor Legislation. 5 hours.

See ECN 690.

691. (ECN) Collective Bargaining. 5 hours.

See ECN 691.

740. Business and Society. 5 hours.

Prerequisite: MAN 351 or 362H.

A study of the major facets of the American business system in their historical and social background; growth of corporate capitalism and industrial state and business institutions in their interaction with cultural and social environment.

749. Entrepreneurship/New Venture Formation. 5 hours.

Prerequisites: MAN 351, ACC 110, MKT 360, FIN 330.

This course will deal with the characteristics of the entrepreneur, a brief history of independent business, causes of success and failure of independent businesses, and the factors involved in starting up an independent business on a sound basis.

756. Special Problems in Small Business. 5 hours.

Prerequisites: MAN 549/749, MAN 554.

This course begins with a study of the environment of small businesses and the factors leading to success and/or failure, then moves into

the particular approaches and tools utilized by the more successful businesses, and applies those tools to an operating concern. The final part of the course involves the student serving as a counselor to a small business that has requested assistance.

792. Problems in Human Resource Utilization. 5 hours.

Prerequisite: MAN 351 or 362H.

A treatment of selected areas of current concern regarding the utilization of human resources.

794. Human Resource Planning and Development. 5 hours.

A study of concepts and methods appropriate to the area of human resource planning and development in contemporary organizations; the application of concepts to the development process and to the design of training programs.

795. Administrative Practices. 5 hours.

Prerequisite: MAN 351 or 362H.

A study of concepts and research findings pertaining to individual and group behavior in organizations; nature and crucial importance of communications, employee motivations and group dynamics; development of greater effectiveness in organizations through a better understanding of managerial philosophies, procedures and techniques.

798F. Production/Operations Management. 3 hours.

Prerequisite: MS 789F or equivalent.

The major thrust of this course is the application of mathematical, statistical and computer science techniques to operations problems. The applications are largely applicable to the production environment but not exclusively so. Topics include mathematical programming, optimization models, Monte Carlo methods, control charts and network analysis.

799F. Management and Organizational Behavior. 3 hours.

Analysis of management functions and processes as applied to organizations, includes fundamentals of line and staff, management principles and techniques and their applications. Study of human behavior in organizations and the administration of organizational behavior conflicts. Particular attention will be given to the interactions of motivation, authority dynamics, and organization structure with human behavior and to the consequent effect on organizational efficiency.

820. The Design of Productive Systems. 5 hours.

Prerequisite: MAN 798F, MS 798F, 799F, 800.

This course shall concentrate on the design of productive systems. Such topics as product/service design; process design/selection; productive capacity; facility size and location; process layout and facility design; job design, performance, measurement, and productivity improvement; and the organization of human resources within a productive system shall be covered.

821. Operations Planning, Scheduling, and Control. 5 hours.

Prerequisite: MS 800, MAN 798F.

An in-depth examination of the problems of aggregate production planning, operations scheduling and control in manufacturing and service organizations. The course will survey the major research results on these problems. Sample topics are Job and Flow Shop scheduling, master scheduling, and resource requirements planning.

822. Inventory Planning and Control. 5 hours.

Prerequisite: MAN 798F, MS 798F, 799F.

This course deals with the management of inventories through the development of inventory control systems. Traditional inventory theory and materials requirements planning will be covered for independent and dependent demand structures.

856. (SPC) Seminar in Group Discussion. 5 hours.

Intensive examination of research in small group communications with major emphasis of those variables which exert greatest influence. Course includes consideration of recent research findings as well as those studies recognized as central to the area of investigation.

896. (SPC) Seminar in Communication and Conflict. 5 hours.

See SPC 896.

898. (PSY) Seminar in Industrial-Organizational Psychology. 2-15 hours.

See PSY 898.

899. Directed Study in Management. 1-15 hours.

Directed study in management will involve the preparation of research papers giving particular attention to specialized problems in any field of management.

900. Organizational Behavior. 5 hours.

Prerequisite: MAN 799F or equivalent.

Critical analyses of research and theory on

complex organizational behavior. Theory building in both structure and process.

902. Seminar in Personnel Research. 5 hours.
An intensive review and critique of published research in the personnel/human resource area. Particular attention will be paid to the adequacy of research design and to the relationship between personnel and organizational effectiveness.

904. (PSY) Seminar in Management Assessment and Development. 5 hours.

A study of methods utilized by contemporary organizations to assess management potential, with an emphasis on the assessment center approach. Consideration of various approaches to the development process; examination of the interface among assessment, development, and management resource planning.

905. The Systems Approach. 5 hours.

The systems approach is primarily a way of thinking. It is a viewpoint that conceptualizes institutions as organized complexities, i.e., as organic (open) systems. The interdisciplinary character of the systems approach is exemplified by the development of general systems theory and cybernetics. This course relates the theories and findings of such interdisciplinary research to the study of human organizations.

906. Decision Theory. 5 hours.

Examination of the philosophical and scientific bases of decision-making processes especially in their qualitative dimensions. Related psychological, organizational, and small-group constructs are analyzed.

907. Productive Systems: Policy and Problems. 5 hours.

Prerequisite: MAN 798F.

A case studies survey of the major policy areas of responsibility of production/operations managers in both manufacturing and service industries. Will demonstrate the interrelatedness of other functional areas in production/operations management by illustrating each major problem area from the standpoint of relevant criteria, constraints, decision alternatives, and interdependencies between areas.

910. Contemporary Management Problems. 1-15 hours.

Prerequisite: Permission of department.

An intensive examination of a limited number of key problems in current management practice and applications — together with a study of research techniques and models for probing them more deeply.

911. Modern Management Theory. 5 hours.

Prerequisite: Master's degree or equivalent.

In-depth study of emerging concepts and theories in management and administration. Each development is traced historically and placed in its cultural environment.

930. Thesis. 1-15 hours.

940. Business and Society. 5 hours.

Provides an opportunity for examining the broad spectrum of the interrelationships between business and society and their changing pattern. The broad objective is to help the student to relate business to its external culture, the social system, and its total environment; and also to develop an understanding of the role of management as the linking mechanism between the business organization and the social environment. Representative issues: corporate power and responsibility, social policy of management, social auditing, managerial ethics, business and governmental balance.

941. Managerial Uses of the Computer. 5 hours.

An introduction to managerial uses and implications of the computer. Topics include the computer and society, routine data processing applications, computer assisted decision making applications, the manager and information systems, the computer's impact upon management and the organization, and computer planning, selection and implementation.

950. Design of Computerized Systems. 5 hours.

An introduction to the steps in the development of computer based information systems. Feasibility studies, principles of analysis and design, tools and equipment used by designers, and factors associated with successful systems are considered.

951. Management Information Systems/Decision Support Systems. 5 hours.

Management information systems, and, more recently, decision support systems, represent the latest in information systems performance. This course explores the characteristics, development requirements, and performance capabilities of these types of systems.

952. International Business Strategy. 5 hours.

Focuses upon the formulation and implementation of integrated corporate strategy by multi-national business organizations. Examines diverse aspects of the planning, direction and control of the many flows (products, technology, capital, personnel, and funds) linking the multinational company to its af-

filialties while operating within a plurality of political, economic, and sociocultural systems.

953. Business Policy Formulation and Administration. 5 hours.

Prerequisite: MBA standing and courses in finance, marketing, and production/operations management.

The final integrating course for the analytical application of business functions and administrative skills. To develop analytical skills and attitudes of top management in administering the company as a whole, and the interrelationships of all problems in the organization. Setting strategic objectives, analysis of changing environments, developing corporate strategies, formulating business policies, and analysis of problems in management functions terms in addition to other analyses in the organization.

954. Small Business Management. 5 hours.

This course is intended to familiarize the student with the role of small business ownership in an economic environment. Special consideration will be given small business enterprise management in its effort for survival and growth, with consideration given to research and development, marketing, finance, and acquisitions and mergers.

956. Business and Competitive Strategy. 5 hours.

Prerequisite: MBA standing and permission of department.

This course covers the latest case materials and conceptual tools available for analysis of specific industry structures and industry evolution, and analyzes the effect that industry characteristics have on competitive strategies and decisions about strategic responses to competitive and industry change.

970. Management Information Systems Research Seminar. 5 hours.

Prerequisite: MAN 941.

A wide variety of research is being conducted in the management information systems field. This course explores research frameworks, research concepts and methods, and exemplary research.

985. Personnel/Human Resource Management. 5 hours.

An in-depth study of the field of personnel/human resource management, and an overview of basic functions and processes. The course will address challenges faced by contemporary organizations, and will examine suggested approaches to dealing with them.

986. (PSY) Seminar in Compensation. 5 hours.
Prerequisite: MAN 985 or equivalent, or permission of department.

The course focuses on theoretical and applied issues in the compensation of employees. The major purpose is to present the state of knowledge in compensation management and opportunity to develop skills in making compensation decisions.

988. (PSY) Seminar in Staffing. 5 hours.

Prerequisite: MAN 985 or equivalent, or permission of department.

A concentrated investigation of the methods appropriate to the development and administration of the staffing process in contemporary organizations. The strategies and the statistics of the validation of personnel screening devices — personnel testing, interviewing and biographical information — are discussed in detail.

989. Federal Regulation of Personnel/Human Resource Management. 5 hours.

A review of federal regulation of human resource management in areas such as equal employment, occupational safety and health, and employee retirement plans.

991. Strategic Management: Concept and Issues. 3-5 hours. (Max. 10 hours.)

Prerequisite: MAN 953 or equivalent or permission of department.

Corequisite: MAN 953 or equivalent.

The field of strategic management is concerned with those issues that affect the basic character and success of any organization and with the functions and duties of those managers who are responsible for resolving such issues. This course will examine the major concepts, theories, and research challenges confronting this field today.

995. The Evolution of Strategic Management Theory. 3-5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

This seminar examines the evolution of strategic management theory through in-depth discussions of literature which builds the field's foundation. The benefits and limitations of key authors' contributions will be reviewed from a teaching, research, and management point of view.

996. (SPC) Seminar in Organizational Communication. 5 hours.

Critical evaluation of research in organizational communication with emphasis on its applicability to the work environment. The relationship between communication and the other managerial processes will be in-

vestigated and means of maximizing the processes considered.

997. Organizational Theory. 5 hours.

An elaboration of recent literature in organization theory and behavior with an emphasis on empiricism and methodology and their relationship with theory.

998. Methods for Personnel/Human Resource Decision Making. 5 hours.

Development of modeling and problem solving skills for dealing with various personnel/human resource problems. Examination of alternative methods for formulating and analyzing problems in areas such as human resource planning and forecasting, recruiting, staffing, compensation and collective bargaining.

999. Business Policy. 5 hours.

Prerequisite: M.B.A. standing and at least one course from each of the major functional areas.

A course dealing with corporate planning and the critically important role of top management in assuring its success; basic tools and methods in making planning decisions; conceptual and operational models of comprehensive corporate planning, including planning in major functional areas; process, development, and structure of such planning; translating objectives and strategies into current operational plans.

MANAGEMENT SCIENCES (MS)

712. Sampling Methodology for Business. 5 hours.

Prerequisites: MS 322H or STA 421/621 or equivalent.

Introduction to sampling methods commonly used in business. Emphasis is on understanding implementation problems and how sampling methods are used in business.

732. Business Forecasting Methods. 5 hours.

Prerequisite: MS 312.

Introduction to the methods and application of forecasting techniques commonly used in business. Techniques such as moving averages, exponential smoothing, regression analysis, time series analysis and Box-Jenkins methods are surveyed. Emphasis is on implementation through relevant projects.

752. Applied Regression Analysis. 5 hours.

Prerequisites: MS 322H or STA 421/621 or equivalent.

Use of regression analysis in business; simple and multiple regression; correlation; special problems in applications to business.

798F. Foundations in Management Sciences. 3 hours. Three hours lecture and one hour lab.

Prerequisite: MAT 204.

Descriptive statistical measures, basic probability notions, estimation and hypothesis testing for the mean and proportion in a population, simple linear models, and decision theory. Emphasis is on applications in a business environment.

799F. Foundations in Data Processing for Business. 3 hours.

Prerequisite: MAT 204.

This is an introductory course in the use of computers in a business environment. The course is designed for graduate students (MBA and others) who have no previous background in the area. Topics include computer programming as well as hardware and operating system concepts. FORTRAN language is taught.

800. Survey of Operations Research. 5 hours.

Prerequisite: MS 798F or equivalent and 799F or equivalent.

A survey of operations research techniques and methodology and their applications to operational business problems. Linear programming, goal programming, transportation models, simulation, queuing theory and other O.R. techniques are stressed.

805. Simulation. 5 hours.

Prerequisite: MS 800 or permission of department.

Introduction to simulation as a tool for model analysis; random number and random variate generation; techniques for modeling complex systems; simulation program design; validation and implementation; applications in business; research projects; computer exercises throughout the course.

812. Applied Statistical Methods. 5 hours.

Prerequisite: MS 312 or equivalent.

Statistical analysis as applied to business. Statistical inferences about population means and variances; inferences from categorical data; nonparametric methods; analysis of variance; applications to problems in business.

815. Linear Programming. 5 hours.

Prerequisite: MS 800 or equivalent.

Models, theory and algorithms that relate to linear programming are presented. Business applications in various disciplines are discussed. Emphasis is on algorithmic procedures such as the primal and dual simplex methods, product form of the inverse, upper bounding and LU decomposition.

817. Stochastic Models. 5 hours.

Prerequisite: STA 451/651 and MAT 471/671 or permission of department.

Introductory treatment of stochastic models in management science; Markov chains; birth and death processes; queueing and inventory models; reliability and maintenance models.

819. Minicomputer/microcomputer Concepts in Business. 5 hours.

Prerequisite: MS 799F.

An examination of small computer hardware and software applied in the business environment. Criteria for developing hardware and software specifications for selecting, testing, and employing small computer systems in business is provided.

839. Data Base Models in Business. 5 hours.

Prerequisite: ACC 530/730 or permission of department.

Examination of the use of data base models in business. This will include a discussion of various data structure techniques and their implementation in computer software. Projects involving the use of data structure applied to various business models will be required.

899. Directed Study in Management Sciences. 5-15 hours.

Designed to permit the student to perform independent and directed study and research. To offer a student the opportunity to study and research subject matter in management sciences not offered as complete subject matter in another course.

905. Advanced Simulation Models. 5 hours.

Prerequisite: MS 805 or permission of department.

Advanced topics in simulation methodology; process view of simulation; output data analysis; variance reduction techniques; model validation and verification.

915. Nonlinear and Large-Scale Optimization. 5 hours.

Prerequisite: MS 815.

This course covers models, theory and algorithms found in the area of nonlinear and large-scale optimization. Applications in various disciplines are discussed. Convexity, Kuhn-Tucker conditions, decomposition techniques and computer implementation of various algorithms are presented.

917. Advanced Stochastic Models. 5 hours.

Prerequisite: MS 817 or permission of department.

Advanced topics in stochastic models, including Markov processes, renewal processes;

theory and application of queueing, inventory, reliability and maintenance models.

930. Thesis. 1-15 hours.

Prerequisite: MS 899.

932. Decision Theory for Business. 5 hours.

Prerequisite: MS 812.

Decision-making under uncertainty and risk; utility theory; classical decision theory and its uses in business; risk functions and decision functions applied to business. The course also examines Bayesian decision theory and its uses in business; Bayes decision rules for discrete and continuous cases; value of information and its application to business.

MARKETING (MKT)

742. Carrier Management. 5 hours.

Prerequisite: MKT 559 or equivalent.

Covers the management of carrier operations. Emphasis is placed on labor productivity, equipment purchasing, pricing, scheduling, and carrier policies and strategies.

743. Current Transportation Issues. 5 hours.

Prerequisite: MKT 559 or equivalent.

The place of transport in our system so far as it is determined by economic, business, governmental, and social requirements. A study of the development of regulation of transport with particular interest in the social aspects.

799F. Seminar in Marketing. 3 hours.

A survey of marketing systems from both the macro and micro points of view. Examines marketing problems and functions.

845. (PSY) Behavioral Theory and Marketing. 5 hours.

Prerequisite: MKT 799F or equivalent.

Study of the role of behavioral theories and models in marketing and public policy decision making. Emphasis is on relevant concepts from psychology, sociology, economics, demography, and anthropology as applied to the decision areas of products, prices, promotion, and distribution.

855. Marketing Research Design and Execution. 5 hours.

Prerequisite: MKT 960 or permission of department.

Overview of marketing research techniques. Emphasizes the design and execution of custom research projects.

861. Consumer Behavior. 5 hours.

Prerequisite: MKT 799F or equivalent.

Provides opportunity to acquire comprehensive understanding of consumer and buyer

behavior and factors influencing that behavior. Emphasizes the measurement of relevant concepts used to explain consumer behavior.

899. Directed Study in Marketing Policy. 5-15 hours.

Prerequisite: Permission of department.

Students design and complete research projects or management audits in the area of marketing management under the supervision of a faculty member. Special assignments in simulations and business games may also be undertaken.

900. Research in Marketing. 1-15 hours. (Max. 30 hours.)

Prerequisite: Approval of advisor and permission of department.

Independent research course on topics approved by advisor and department head.

920. Advertising and Sales Promotion. 5 hours.

Focuses on advertising and sales promotion decision, especially those involved with setting objectives, creating campaigns, and measuring results. Develops an analytical basis for advertising and sales promotion management.

921. Sales Management. 5 hours.

Study of field sales management with emphasis on the role of personal selling in the marketing mix, building an effective organization, and controlling and evaluating the sales force.

922. Retail Management. 5 hours.

Focuses on needs and problems of retailers and wholesalers in the distribution system. Develops basic concepts and analytical techniques involved in demand analysis; spatial, merchandising, and promotion planning; and methods of organizational control.

923. International Marketing. 5 hours.

An analysis of planning, organization, and control aspects of multinational marketing operations and the effects of comparative economies, societies, and cultures on marketing opportunities.

924. Marketing Research for Brand Management. 5 hours.

Prerequisite: MKT 799F.

This course focuses on the sources and types of marketing information useful in brand management. The course emphasizes using objective data in developing marketing plans.

930. Thesis. 1-15 hours.

940. Physical Distribution. 5 hours.

Examines the management of activities required to insure efficient physical supply of

goods, emphasizing location decisions, inventory control, transportation management, logistics information, and distribution service standards.

941. Transportation. 5 hours.

The various forms of transport are considered with special emphasis on their interrelationships. Problems of management are reviewed with consideration given to economic, social, and political objectives which enter managerial decisions.

950. Ethics in Business Practices. 5 hours.

An analysis of the changing character of the relationships of business management to social groups, including the development of honesty and integrity as fundamental values of managerial development.

960. Strategic Marketing. 5 hours.

Prerequisite: MKT 799F or equivalent.

Focuses on contemporary marketing practice and provides opportunity to acquire comprehensive understanding of marketing. Emphasis on the marketing process, strategic marketing planning, and marketing decisions.

961. Marketing Theory. 5 hours.

Prerequisite: MKT 799F or equivalent.

Essential elements of philosophy of science and their use in marketing are considered. Emphasizes the structure of theoretical explanation and the interaction between marketing theory and practice.

962. Marketing Data Collection Procedures. 5 hours.

Prerequisite: MKT 861 or permission of department.

Special data collection procedures used in marketing research are considered, particularly questionnaire design and qualitative interviews.

963. Measuring Marketing Effectiveness. 5 hours.

Prerequisite: MKT 961, MS 799F or permission of department.

Analysis of marketing data emphasized. Covers the use of models, regression analysis, and experimental design in marketing research. Emphasizes analysis of historical marketing data and the design and analysis of field experiments in marketing.

964. Administrative Data Analysis and Reporting. 5 hours.

Prerequisite: MKT 962, 963 or permission of department.

Analysis and reporting of data from secondary sources emphasized.

965. Marketing Research Methodolgy. 5 hours.

Prerequisite: MKT 960 or three undergraduate courses in marketing and permission of department.

Examines the philosophy, concepts, and methods of marketing research design. Covers experimental methods, sampling procedures, measurement techniques, and other methodological problems in marketing research. The student is introduced to data reduction and statistical modeling programs.

966. Marketing Research Applications. 5 hours.

Prerequisite: MKT 855, 962, 963 or permission of department.

Designed to synthesize marketing research in its major areas of application including strategy, product, advertising and media, and sales.

REAL ESTATE AND LEGAL STUDIES (RE)

711. (BL) Real Estate Law. 5 hours.

Real estate law is a study of how the law affects real property. Topics covered include property ownership and interests, restrictions on such interests, real estate sales documents, landlord-tenant agreements, conveyances, and broker-owner relationships. Also discussed are the licensing requirements for brokers and sales people.

800. Real Estate Analysis. 5 hours.

Prerequisite: Permission of department.

An analysis of real estate markets including such topics as property values, patterns of land use, and the impact of political, demographic, and economic factors on changes in values and use.

893. Real Estate Investment. 5 hours.

Prerequisite: Permission of department.

The theory, principles and techniques of real estate investment, emphasizing present value and cash-flow approaches to real estate investment decisions.

899. Independent Study. 1-15 hours.

Prerequisite: Permission of department.

930. Thesis. 1-15 hours.

990. (ECN) Regional Economics. 5 hours.

Prerequisite: Permission of department.

Measurement and analysis of regional economic activity. Evaluating regional economic development policies. Analysis of land use change and policies.

992. (ECN) Urban Economics. 5 hours.

Prerequisite: Permission of department.

Economic analysis of growth and development of urban areas and discussion of public policy responses to urban problems.

994. Advanced Valuation Theories. 5 hours.

Prerequisite: Permission of department.

A review of the historical development and present trends in appraisal theory. The course emphasizes the theoretical problems in applying valuation techniques.

995. Real Estate Finance. 5 hours.

Prerequisite: Permission of department.

An analysis of the role of financing in real estate decisions, including such topics as mortgage risk, financial leverage, mortgage techniques and secondary mortgage markets.

RISK MANAGEMENT AND INSURANCE (INS)

702. Casualty Insurance Problems. 5 hours.

Prerequisite: INS 385.

Advanced study of all types of casualty insurance; automobile, professional and general liability, multi-line coverage, and how these relate to the risk-bearing function; legal and technical aspects of selection of risk, contract underwriting and loss adjustment.

703. Property Insurance Problems. 5 hours.

Prerequisite: INS 385.

Practical application of property insurance policies, including multiple-lines, to specific risk-bearing problems; survey and insurance counseling to complex problems; legal and technical aspects of selection of risk, contract underwriting, and loss adjustment.

704. Life Insurance Law and Reserve Calculations. 5 hours.

Prerequisite: INS 381.

The legal interpretations and contract provisions, beneficiary designations and settlement options of the life insurance contract. The mathematic approach to premium rates and reserves is also analyzed. Partial preparation for Part HS 302 of the CLU examinations.

705. Business Life Insurance. 5 hours.

Prerequisite: INS 381.

A study of the continuation problems of proprietorships, partnerships, and corporations and their solutions through the use of funded buy-sell agreements. Other problems covered include key man insurance, non-qualified deferred compensation and split-dollar plans. Partial preparation for Part HS 309 of the CLU examination.

706. Social Insurance. 5 hours.

An interdisciplinary study of public and private insurance systems and related governmental programs applicable to problems of economic insecurity due to risks inherent in society, including premature death, disability, retirement and unemployment. Roles of government, employers and individuals in protecting their income flow from risks through risk-aversion systems are analyzed.

707. Insurance Agency Management. 5 hours.
Prerequisite: INS 381 and 385.

The economic functions performed by the general agency and its position in the insurance distribution system. Emphasis is given to the management aspects of agency operations from the sales, administrative and financial viewpoint.

711. Pension Planning and Employee Benefits. 5 hours.

Prerequisite: INS 381 or equivalent.

Private approaches to the problems of employee financial security. Components of employee benefit programs. Employee attitudes toward benefits. Theory of group programs. Group life and health insurance. Basic features of pension plans. Funding, vesting, tax, actuarial and communication problems. Profit sharing. Plans for self-employed. Effect of ERISA. Cases and problems.

713. Business Risk Management. 5 hours.

Prerequisite: INS 381 and 385.

An analysis of the risks faced by the business enterprise and the study of the various methods of handling these risks including loss prevention, risk retention, self-insurance, and corporate insurance programs. Extensive use of case method and logical decision making.

899. Directed Study in Risk Management. 1-15 hours.

A field study project in risk analysis and risk management and emphasis on the analysis of both pure and speculative risk in the enterprise and how risk affects business policy and the discharge of management function.

930. Thesis. 1-15 hours.

987. Insurance Seminar. 5-10 hours.

Designed for the non-insurance major to reach an understanding of the importance of risk in personal and business endeavors. The course is aimed at the intelligent handling of risk through insurance, self-insurance, retention, loss-prevention, and other methods of dealing with risk. A portion of the course is devoted to the analysis and solution of risk situations.

988. Risk Management Seminar. 5-10 hours.

Prerequisite: Admission to a graduate program in the College of Business Administration or permission of department.

The concept of risk management. How attitudes toward risk influence business decisions. Risk management as a functional area of business. Methods of handling risk, including assumption, transfer, commercial insurance, loss control, and avoidance. Self-insurance and the captive insurer movement. Pure vs. speculative risk. International risk management problems. Cases and problems.

992C. Employee Benefits. 5 hours.

A study of employee and/or employer oriented fringe benefit plans to include group life, group health, pension and retirement programs, private and public. Relationship of insurance to non-insurance benefits.

CHEMISTRY (CHM)

Lockhart B. Rogers
(Chemistry Building, South Campus)

The Department of Chemistry offers courses of study and research leading to the Master of Science and Doctor of Philosophy degrees. The candidate for the Master of Science degree must complete a program of study approved by his major professor, the graduate coordinator, and the Dean of the Graduate School. The student must complete and defend a thesis based upon his research. This research should involve contributions of a publishable quality. There is no foreign language reading requirement for the MS degree in chemistry.

The PhD applicant chooses a major concentration in analytical, inorganic, organic, or physical chemistry. A program of study including course work in the major and minor fields and the student's research objectives must be completed and approved by the major professor, the graduate coordinator, and the Dean of the Graduate School. A reading knowledge of one foreign language selected from German, French, and Russian is required. After satisfactorily completing his prescribed course of study, the language examinations, and a comprehensive written and oral examination in his major field, the student is officially admitted to candidacy for the PhD degree. This degree is awarded for proficiency and scholarship in research and a thorough acquaintance with a specific field of knowledge which the candidate demonstrates by the presentation and defense of a dissertation based upon independent work which contributes significantly to knowledge in the student's field.

Current research and teaching equipment includes a variety of ultraviolet, visible, infrared, far infrared, nuclear magnetic and electron spin resonance spectrometers (including the Beckman IR-11, DK-2A and DU; the Perkin-Elmer Models 621, 457, 257, 297, 599, and 202; the Cary Models 14, 15, 16, 219, and 60; the Varian A-60, HA-100, T-60, EM 390, and V-4502-14; the Hitachi-Perkin-Elmer R-20 "NMR unit with heteroprobe capability),"

JEOL Models 90Q and 270, the Finnigan GC-MS mass spectrometer, various models of separation systems of gas and liquid chromatographs, several microcomputers and minicomputers used for instrument control and data acquisition and other specialized equipment used in high pressure spectroscopy, calorimetry, light scattering studies, electrochemistry and radiation chemistry.

Unless otherwise specified, all laboratory periods are three hours.

600. The History of Chemistry. 5 hours.

Prerequisite: 25 hours of chemistry or permission of department.

The historical development of chemistry and its relation to other sciences. Economics attendant to the chemical industries included and individual investigations of specific developments encouraged through written assignments based upon literature searches. The important work of prominent chemists in various fields will be treated.

602L. Experimental Inorganic Chemistry. 2 hours.

Pre- or corequisite: CHM 426/626 or 602.

A laboratory course involving the synthesis and characterization by modern techniques of typical inorganic compounds.

605. The Literature of Chemistry. 2 hours.

Prerequisite: 15 hours of chemistry or permission of department.

An introduction to the literature of chemistry, research procedures, and directions which can be found only in original sources.

617. Principles of Molecular Spectroscopy. 3 hours. (Max. 12 hours.)

Prerequisite: CHM 491C/691C or equivalent.

The general theory of specific areas of spectroscopy such as ultraviolet, infrared, NMR, ESR or mass spectrometry.

618. Methods of Molecular Spectroscopy. 2 hours. (Max. 8 hours.)

Prerequisite: CHM 491C/691C or equivalent.

Complements CHM 417/617 by studying the instrumentation and operation of specific instruments.

621. Advanced Inorganic Chemistry. 5 hours.

Prerequisite: CHM 123 and one additional chemistry course with laboratory period.

A comprehensive study of inorganic chemistry based upon the periodic arrangement of the elements.

626, 627. Intermediate Inorganic Chemistry. 3 hours each.

Prerequisite: CHM 491C/691C or equivalent.

A two-quarter sequence designed as an intro-

duction to modern theories of bonding and structure, reaction mechanisms and synthetic methods in inorganic systems.

630, 631, 632. Intermediate Organic Chemistry. 3 hours each.

Prerequisite: CHM 441/641 and 491C/691C or equivalent or permission of department.

A three-quarter sequence designed to increase the student's understanding of structure, mechanisms and synthesis as applied to organic compounds and reactions.

637. Interpretative Spectroscopy in Organic Chemistry. 3 hours.

Prerequisite: CHM 342.

Practical introduction to ultraviolet, infrared, ^1H - and ^{13}C -nuclear magnetic resonance, and mass spectroscopy as tools for characterization of the structure of organic molecules, with particular emphasis on identifying structures from representative sets of spectra.

641. Organic Qualitative Analysis. 2 hours.

Prerequisite: CHM 342; Corequisite: CHM 441L/641L.

An application of organic chemistry to the solution of structural problems, including both chemical and spectroscopic methods.

641L. Organic Qualitative Analysis Laboratory. 3 hours. Three lab periods.

Corequisite: CHM 441/641.

644. Heterocycle Chemistry. 3 hours.

Prerequisite or corequisite: CHM 342.

A study of the structures, spectra, reactions and synthesis of heterocyclic compounds.

680. Introductory Instrumental Analysis for Biologists. 3 hours.

Prerequisite: CHM 280 or equivalent or permission of department.

A broad survey of those topics of instrumental analysis of particular importance to the biological sciences.

691ABC. Physical Chemistry. 4 hours each.

Prerequisite: CHM 139 or 280, 341, PCS 229 or 239, MAT 255.

A three-quarter sequence in the fundamental principles of physical chemistry. Kinetic molecular theory, thermodynamics, equilibria, electrochemistry, reaction kinetics, quantum mechanics and molecular spectroscopy. Intended for students who will enter chemistry as a profession or will do advanced study in chemistry.

692. Chemical Thermodynamics. 3 hours.

Prerequisite: CHM 491C/691C or equivalent. Classical and statistical thermodynamics as applied to chemical reactions, phase equilibria, and solutions.

693. Quantum Chemistry. 3 hours.

Prerequisite: CHM 491C/691C or equivalent.

Introduction to basic principles of quantum mechanics and applications to model systems. Approximation methods, chemical bonding and spectroscopy.

694. Chemical Kinetics. 3 hours.

Prerequisite: CHM 491C/691C or equivalent.

Mechanisms and energetics of chemical reactions in the gas phase and in solution. Heterogeneous reactions, collision and transition state theories and relaxation methods.

695. Radiochemistry. 3 hours.

Prerequisite: CHM 491B/691B or 391.

Principles of radioactivity and the measurement of ionizing radiation. Applications to chemical problems. Lectures and laboratory exercises.

696A. Experimental Physical Chemistry. 1 hour.

Prerequisite or corequisite: CHM 390 or 491A/691A.

Treatment of experimental data, errors, graphical procedures and mathematical techniques.

696BC. Experimental Physical Chemistry. 2 hours each.

Prerequisite or corequisite: CHM 391 or 491BC/691BC.

Laboratory experiments in selected areas of physical chemistry. Thermochemistry, colligative properties, electrochemistry, reaction kinetics and spectroscopy.

697. Introductory Statistical Thermodynamics. 3 hours.

Prerequisite: CHM 491C/691C.

A study of the thermodynamic properties of macroscopic systems in terms of molecular properties. Boltzmann, Bose-Einstein and Fermi-Dirac distributions and their application to chemical and physical systems.

698. Methods of Theoretical Chemistry. 3 hours.

Prerequisite: MAT 255 or equivalent.

A survey of methods used in treating problems of theoretical chemistry, including both numerical and graphical methods.

780. Instrumental Methods of Analysis. 3 hours.

Prerequisite: CHM 341, 381, 496C/696C.

The use of electrochemical (ion selective electrodes, polarography and coulometry), radiochemical, thermal (thermogravimetry, scanning calorimetry) and kinetic methods of analysis.

780L. Instrumental Methods of Analysis Laboratory. 2 hours. Two lab periods.

Prerequisite or corequisite: CHM 580/780.

781. Chemical Instrumentation. 4 hours.

Prerequisite: PCS 128 or 138.

A systematic study of electronic measurements including the design and construction of instruments to solve practical chemical problems.

781L. Chemical Instrumentation Laboratory.

2 hours. Two lab periods.

Prerequisite or corequisite: CHM 581/781.

785. Interpretive Spectroscopy. 3 hours.

Prerequisite: CHM 381, 342.

Fundamental emphasis will be placed on the principles and practice of interpretive spectroscopy. Spectroscopic methods such as IR, Raman, NMR, ESCA and mass spectrometry pertinent to the identification and characterization of organic and inorganic materials will be stressed. The philosophy of the course relates to the combined use of these techniques for structural identification, as opposed to use of a single technique.

811. Chemical Seminar. 1-18 hours.

Prerequisite: A bachelor's degree with a major in chemistry.

A study by the seminar method of some phase of current research in chemistry.

821A. Modern Inorganic Theory. 3 hours.

Prerequisite: 20 hours of chemistry with laboratory.

The first of a three-quarter sequence dealing with the theoretical aspects of modern inorganic chemistry. Emphasis would be placed upon current theories of chemical bonding and the use of mathematical models in the interpretation and treatment of experimental data.

821B. Modern Inorganic Theory. 3 hours.

Prerequisite: CHM 821A.

821C. Modern Inorganic Theory. 3 hours.

Prerequisite: CHM 821B.

824. Current Topics in Inorganic Chemistry. 3 hours. (Max. 21 hours.)

Prerequisite: CHM 821C or equivalent.

An in-depth treatment of selected specialized topics of current interest to inorganic chemists. Topics will vary from quarter to quarter depending upon the instructor and the student demand.

831A. Modern Organic Theory. 3 hours.

Prerequisite: CHM 342 or equivalent.

Selected organic reactions will be discussed in

modern electronic terms. Important mechanisms of reactions will be presented and modern theories will be introduced.

831B. Modern Organic Theory. 3 hours.

Prerequisite: CHM 831A or equivalent.

This course is a continuation of CHM 831A. Organic reactions, mechanisms, and modern theories of organic chemistry will be presented.

831C. Modern Organic Theory. 3 hours.

Prerequisite: CHM 831B or equivalent.

This course will consist of lectures and discussions of various topics of modern organic chemistry conducted at an advanced and scholarly level.

834. Current Topics in Organic Chemistry. 3 hours. (Max. 15 hours.)

Prerequisite: CHM 831C or permission of department.

Three hours lecture and discussion in current subjects of interest in organic chemistry, or equivalent library and report work. The course will be designed to help keep the student abreast of current developments in a rapidly expanding, ever-changing discipline.

840. Advanced Organic Synthesis. 1-5 hours.

Consultations and lab periods.

Prerequisite: CHM 342.

Selected advanced syntheses will be studied historically and in the laboratory.

849. Introduction to Research. 5 hours. One consultation and four library or lab periods.

Prerequisite: CHM 427/627 or 441/641 or 491C/691C or 580/780.

Introduction to measurements, syntheses, and design of experiments applicable to the solution of current research problems in various chemical fields.

881A. Advanced Analytical Chemistry. 3 hours.

Prerequisite: CHM 491C/691C.

The course will offer a rigorous treatment of selected principles of analytical chemistry such as homogeneous and heterogeneous equilibria, separation techniques, use of organic reagents for precipitation and extraction of metals.

881B. Advanced Analytical Chemistry. 3 hours.

Prerequisite: CHM 881A.

881C. Advanced Analytical Chemistry. 3 hours.

Prerequisite: CHM 881B.

884. Current Topics in Analytical Chemistry.

3 hours. (Max. 15 hours.)

Prerequisite: CHM 881AB.

Three hours lecture and discussion in current subjects of interest in analytical chemistry or equivalent library and report work. The course will be designed to help keep the student abreast of current developments in a rapidly expanding and changing discipline.

891B. Advanced Chemical Thermodynamics.

3 hours.

Prerequisite: CHM 492/692.

Application of thermodynamic methods and theory to the quantitative calculation of the equilibrium properties of chemical systems.

895A. Advanced Quantum Chemistry I. 3 hours.

Prerequisite: CHM 493/693 or permission of department.

Exact and approximate solutions to Schrodinger's equation as they apply to systems of chemical interest. Emphasis is on treatment of model systems, as well as on methods that are useful for a variety of problems.

895B. Advanced Quantum Chemistry II. 3 hours.

Prerequisite: CHM 895A.

895F. Special Topics in Physical Chemistry. 3 hours. (Max. 9 hours.)

Prerequisite: Permission of department.

Advanced topics of current interest and importance in physical chemistry.

900. Chemical Research. 1-50 hours.

Independent laboratory investigation of approved problems in various fields of chemistry under the direction of individual staff members.

901. Problems in Chemistry. 1-50 hours.

Prerequisite: 50 hours in chemistry.

Intensive work on approved problems in certain fields of chemistry.

930. Thesis. 1-15 hours.

CLASSICS (CLC)

R.A. LaFleur

(Park Hall, North Campus)

Graduate work is offered in Greek, Latin or Classics leading to a Master of Arts degree. Requirements for the degree include 40 hours of course work, of which 20 hours must be in the major language (for the degree in Latin or Greek), or 30 hours in Greek and Latin combined (for the Classics degree), and the remainder in any of a variety of courses in Greek, Latin, classical civilization, Greek or Roman history, archaeology, art, philosophy, linguistics, or other related areas, to be chosen in consultation with the department. All candidates complete a thesis related to their major language, and must pass both a preliminary written exam on a list of readings in ancient authors and modern criticism, and an oral examination on their thesis. All candidates must also have a reading knowledge of a foreign language other than Latin or Greek.

Candidates for the degree of Doctor of Philosophy in the department of Comparative Literature may also choose Latin or Greek as one of their required languages. The University's College of Education provides courses that may be taken simultaneously with those in Classics to obtain teacher certification (in Georgia, Certificates T-5 and T-6).

Graduate credit is offered for summer quarter participation in the Georgia Excavations at Roman Carthage (North Africa) and/or in the University System of Georgia Studies Abroad Program in Greece and Italy.

Several assistantships are available, for which application must be completed by February 15.

CLASSICAL CULTURE (CLC)

Classical Culture courses require no knowledge of Greek or Latin, except where indicated.

649. Archaic Greece. 5 hours.

Prerequisite: Ten hours of language and literature courses.

Close study of the expanding world of Greek

culture in the period from 750 to 480 B.C., including consideration of the many new and influential developments in art, literature, history, political science, and philosophy and their interrelationships.

650. Theory and Analysis of Ancient Myth. 5 hours.

Prerequisite: CLC 120 or 150 or permission of department.

An introduction to the various approaches to the interpretation of ancient Greek and Roman myth, with emphasis on structuralist and semiotic interpretation.

651. Greek Sanctuaries and Festivals. 5 hours.

Prerequisite: CLC 120 (305H) or permission of department.

An examination of the major Greek sanctuaries and their physical remains, and of the Greek religious calendar and its important festivals, including the Olympic Games and the Panathenaica.

652. Classical Archaeology. 5 hours.

A survey of Greek and Roman archaeology, including a discussion of the development of field techniques from Schliemann to the present day.

653. Ancient Cities of Greece and Rome. 5 hours.

Survey of selected Greek and Roman cities and their architecture to understand the principles upon which they were planned and laid out. Students will study the theories of Hippodamus and others and the writings of Vitruvius. Detailed study of the topography of Athens and Rome.

655. Pompeii and Herculaneum: The Buried Cities. 5 hours.

Prerequisite: CLC 121 or 306H or HIS 325 or 439F/639F or 439P/639P or permission of department.

An in-depth study of Pompeii, Herculaneum, and the area destroyed by the eruption of Mt. Vesuvius. Concentration will be on political, social, religious, and economic life combined with a study of the painting, sculpture, and architecture of the excavated cities and villas.

656. Homer and the Epic Tradition. 5 hours.

A study of Homer in translation emphasizing his influence on later European literature. Analysis of the epic as a literary form; reading of selected epics of other periods.

657. Ancient Tragedy. 5 hours.

Prerequisite: Five hours of literature or ancient history or drama.

Examination of the conventions of classical tragedy as exemplified in the plays (in English

translation) of the Greek dramatists Aeschylus, Sophocles, and Euripides, as well as the Roman tragedian Seneca.

659. Roman Satire. 5 hours.

Prerequisite: CLC 121 or 306H or HIS 325, 439F/639F or 439P/639P or permission of department.

A survey of the development of Roman satire, including an analysis of the social, political, and moral climate of ancient Rome.

660. Roman Epic Poetry. 5 hours.

Prerequisite: CLC 121 or 306H or HIS 325 or 439F/639F or 439P/639P or permission of department.

A study of the epic poetry of ancient Rome with special emphasis on the three outstanding epic writers: Ennius, Vergil, and Lucan. The historical background of epic will be examined, and the poems will all be read in English translation, some attention being given to Renaissance and modern translations.

661. Ancient Comedy. 5 hours.

Prerequisite: Five hours of literature or ancient history or drama.

A survey in translation of ancient comedy, both Greek and Roman, including plays by Aristophanes, Menander, Plautus, and Terence, and a consideration of the differences between political satire on the one hand and humor involving timeless human dilemmas on the other.

662. The Archaeology of the Greek Colonies. 5 hours.

Prerequisite: CLC 120 or HIS 111 or 325 or 438M/638M or 438P/638P or ART 287.

An examination of the archaeology of the Greek colonies in Ionia, Magna Graecia, and the Black Sea area to identify and explain the combination of Greek and indigenous cultures in these areas on the fringes of the Greek world.

663. The Hellenistic World. 5 hours.

Prerequisite: CLC 120 or ART 287 or HIS 111 or 325 or 438M/638M or 438P/638P or 439F/639F or 439P/639P.

An in-depth examination of archaeology, art, culture and history of Greece and the East from the rise of Alexander to Rome's annexation of Egypt.

664. The Archaeology of Rome's Provinces. 5 hours.

Prerequisite: CLC 121 or 306H or HIS 111 or ART 287 or HIS 439P/639P or ART 477/677 or CLC 453/653 or permission of department.

An examination of the archaeology of the

Western and/or Eastern provinces of the Roman Empire, concentrating on the major cities and sanctuaries and their physical remains.

680. Practicum in Classical Archaeology. 5 hours.

Prerequisite: CLC 120 or 121 or permission of department.

Corequisite: CLC 481/681.

Introduction to all aspects of modern field archaeology on a classical site, including excavation techniques, the keeping of field records and the classification and conservation of finds from the moment of recovery to their final deposition in museums. (Open only to students participating in the University's Mediterranean excavation.)

681. Archaeology of Punic and Roman Carthage. 5 hours.

Prerequisite: CLC 120 or 121 or permission of department.

Corequisite: CLC 480/680.

An intensive study of the civilization of Roman North Africa from the Punic period through the Arab Conquest, using the important city of Carthage as a model. (Open only to students participating in the University's Mediterranean excavation.)

800. Proseminar in Classics: Bibliography and Methods of Research. 1 hour.

A survey of methods, history, and bibliography in philology and other areas of the Classics as a background to graduate study in Greek and/or Latin.

801. Greek Civilization. 5 hours.

Prerequisite: Ten hours of approved advanced courses in Classics, modern languages, or literature.

Survey of Greek civilization, with emphasis placed on a selected topic for special study; readings in Greek literature in translation. Knowledge of Greek not required.

802. Roman Civilization. 5 hours.

Prerequisite: Ten hours of approved advanced courses in Classics, modern languages, or literature.

Survey of Roman civilization, with emphasis placed on a selected topic of special study; readings in Roman literature in translation. Knowledge of Latin not required.

GREEK (GRK)

601. Homer. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

A detailed study of selections from the *Iliad* and/or the *Odyssey*.

602. Hesiod. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

Close study of Hesiod's two surviving poems, *Theogony* and *Works and Days*, with special attention to the relationship of his language and religious thinking to that of Homer.

603. Greek Lyric Poets. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

A study of the whole body of extant Greek elegy and lyric, with attention to the political and social background, and to the relation of these literary types to epic and dramatic poetry.

604. Herodotus and Thucydides. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

The Persian and Peloponnesian Wars through selected readings.

605. Aeschylus. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

Close study of two or three of Aeschylus' seven surviving plays, with emphasis on his theology and special uses of the Greek language.

606. Sophocles. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

Close study of two or three of Sophocles' seven surviving plays, with emphasis on the poet's religious and humanistic values and his dramatic style.

607. Euripides. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

Close study of two or three of Euripides' nineteen surviving plays, with emphasis on the poet's dramatic style, and his treatment of social, political, and religious themes.

608. Aristophanes. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

Reading, translation, and analysis of selected comedies of Aristophanes. Emphasis is placed on the language, style, and thought of Aristophanes, and on the characteristics of Greek Old Comedy.

609. Advanced Readings: Plato. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

Advanced reading, translation, and analysis of

the dialogues of Plato. Emphasis is placed on the language, style, and philosophical thought of Plato.

610. Attic Orators. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

A study of the orations of Demosthenes, Lysias, and Aeschines, with emphasis on the function and techniques of persuasion in oratory and on the political and social contexts of these orations.

620. Readings in Selected Greek Authors. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of 400-level Greek or equivalent.

Study of less commonly read Greek authors, such as Pindar, Xenophon, Menander, Lucian, Plutarch, to be chosen according to the interests of students and instructor.

801. Readings and Research in Greek Literature. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced Greek (400/600 level).

Intensive readings in Greek literature and in pertinent critical writings. The topic, author, or genre covered will be determined by the student's previous training and interests.

900. Research Topics in Greek Literature and Civilization. 5 hours. (Max. 25 hours.)

Prerequisite: Permission of department.

Investigation into advanced topics in Greek literature and civilization, preparatory to the writing of a Master's thesis.

930. Thesis. 1-15 hours.

LATIN (LAT)

602. Roman Epic. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from the Latin epic poets Ennius, Vergil, Lucan, and others.

603. Roman Historians. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from such Roman historical writers as Caesar, Sallust, Livy, Tacitus, and Suetonius.

604. Roman Elegy and Lyric. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from the works of the poets Catullus, Tibullus, Horace, Ovid, and others. Studies in the development of Latin poetic form, meter, and diction.

605. Roman Epistles. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from the letters of Cicero, Seneca, Pliny the Younger, and others.

606. Roman Satire. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from the satirists Horace, Juvenal, and others.

607. Roman Drama. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from the comedies of Plautus and Terence, and the tragedies of Seneca and others.

608. Roman Didactic Poetry. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

The poet as teacher. Major portions of Lucretius' poetic treatise on Epicureanism, the *De Rerum Natura*, and Vergil's *Georgics*. The manner in which poetic form and imagery express philosophy.

609. Medieval Latin. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from one or more Medieval Latin authors. A study of Latin vocabulary and style during the Middle Ages.

610. Latin Epigraphy. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Study of Latin inscriptions and the science of epigraphy.

611. Roman Rhetoric. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from the rhetorical writings and/or orations of Cicero, Quintilian, Seneca Rhetor, and others.

620. Advanced Readings in Latin. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in Latin.

Selected readings in one or more Latin authors or genres. Topics to be selected on the basis of students' needs.

801. Readings and Research in Latin Literature. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced Latin.

Intensive readings in Latin literature and in pertinent critical writings. The topic, author, or genre covered will be determined by the student's previous training and interests.

900. Research Topics in Roman Literature and Civilization. 5 hours. (Max. 25 hours.)

Prerequisite: Permission of department.

Investigation into advanced topics in Roman literature and civilization, preparatory to the writing of a Master's thesis.

930. Thesis 1-15 hours.

COMPARATIVE LITERATURE (CML)

Frank J. Warnke

(Park Hall, North Campus)

Foreign language requirements: MA, fluent reading knowledge of one and reading competence in a second; PhD, fluent reading knowledge of two and reading competence in a third.

Students in the comparative literature department do part of their work in this department and part in the departments of the various literatures. The MA requires 40 credit hours of course work, plus a thesis on a comparative topic. Twenty hours must be in graduate CML courses, and 15 hours in graduate courses in other language and literature departments (up to 5 hours may be taken in a related non-literary discipline). The PhD requires 60 credit hours of course work, of which 25 hours must be in graduate CML courses and 20 hours in graduate courses in other language and literature departments (up to 5 hours may be taken in a nonliterary discipline). Candidates for the PhD are required to pass examinations in a national literature, in a period of world literature, and in a genre of world literature. The dissertation must be on a comparative topic.

The prospective student in comparative literature should look over the announcements of the offerings in the departments of the individual literatures in which he is interested, as well as those of the comparative literature department.

Prerequisite for admission to any of the following courses is a fluent reading knowledge of at least one foreign language or permission of department.

607. Renaissance European Literature. 5 hours. A survey of the literatures of Western Europe (Italian, French, Spanish, Germanic, and English), 1450-1600, with emphasis on literary types and prevailing ideas. Reading of representative works.

608. The Romantic Movement in Western Literature. 5 hours.

A comparative study of the rise and development of Romanticism in the 18th and 19th Centuries, with reading of selected literature and criticism.

609. Modern Continental Poetry. 5 hours.

A study of experimental trends in lyric poetry of Western Europe from mid-19th Century to the present.

611. Medieval Narrative. 5 hours.

A study of the types of medieval narrative — epic, romance, saga, beast-epic, *fabliau*, and *exemplum* — with reading and analysis of outstanding examples of these types.

612. 18th Century European Literature. 5 hours.

A survey of the literature of England, France, and Germany in the 18th Century, with emphasis on literary types and prevailing ideas. Reading of representative works.

615. The Novel. 5 hours.

A study of the novel as a genre. Origins of prose fiction, theory of the novel, and representative readings from the 16th through the 20th Centuries in Spanish, English, French, German, and Russian.

617. The Modern Continental Novel. 5 hours.

The crisis in 20th Century Western civilization as reflected in the fiction of such writers as Joyce, Proust, Mann, Gide, Kafka, Camus, and Moravia.

620. Literature and the Visual Arts. 5 hours. (Max. 10 hours.)

Prerequisite: Graduate status in the Division of Language and Literature or Fine Arts, or permission of department.

Formal, philosophical, and thematic relationships between literature and one or more of the visual arts in a given period. Instructor will determine focus of course.

625. Seminar in the Comic Mode. 5 hours.

A seminar exploring the relation of humor to the philosophical and ideological orientation of culture in comic literature from Europe and Latin America from the Middle Ages to the present.

626. Seminar in the Tragic Mode. 5 hours.

A study of the nature of the tragic and the relationship of tragic literature to the philosophical, religious, and ideologic orientation of its culture from Antiquity to the present in the literatures of Europe and America. Instructor will determine the focus of the course.

627. Seminar in the Didactic Mode. 5 hours.

A study of didactic literature in relation to the ideology of its culture (dominant or subversive) in European and American letters. Instructor will determine focus of the course.

651. Music and Literature. 5 hours.

A comparative study of the forms, relationships, and aesthetics of music and literature.

802ABCDE. Seminar in Literary Periods and Genres. 5 hours each.

A specific period or genre will be studied in detail with emphasis upon individual research.

A. Topics in Romanticism.

B. The Baroque.

C. Medieval and Renaissance Drama

D. Drama From the 17th Century to the Present.

E. The Lyric.

810. Problems in Comparative Literature. 5 hours.

A consideration of some problem or group of closely related problems in comparative literature, with special attention to methodology, bibliography, and the processes of research.

813ABC. Seminar in Literary Themes and Types. 5 hours each.

A specific theme or type will be studied in detail with emphasis upon individual research projects.

A. The Faust-Motiv in Literature.

B. Problems in Literary Translation.

830. Contemporary Literary Theory and Criticism. 5 hours.

Prerequisite: Open to graduate students in the humanities.

An examination of representative contemporary trends in literary theory and critical method, as exemplified by diverse figures from a number of differing national and linguistic cultures.

898. Readings in Comparative Literature. 5 hours.

Prerequisite: Permission of department.

Independent reading with regular conferences and reports, in some aspects of comparative literature.

900. Research in Comparative Literature. 1-15 hours. (Max. 50 hours.)

Individual study in specific areas of comparative literature, under faculty direction.

930. Thesis. 1-15 hours.

DRAMA (DRA)

August W. Staub
(Fine Arts Building, North Campus)

Graduate work in drama is offered in the areas of history and theory of dramatic art for the MA and PhD degrees and in the creative and technical aspects of stage, film, and TV for the MFA degree. Details of this program may be found on page 42. Facilities include four theatres, film production and editing areas. Extensive library facilities and cooperative research arrangements with cognate departments are available.

Prospective students who desire financial aid should complete their application with the Department of Drama before February 15.

600. Playwriting. 5 hours.

Laboratory course in dramatic writing, including study and practice in writing for the modern stage and screen.

612. Theory and Criticism of the Cinema. 5 hours.

An examination of the aesthetic basis of the international cinema as a dramatic medium and a history of the significant theories.

620. History of the Theatre. 5 hours.

Prerequisite: Two senior division courses in English or drama.

A study of the history of dramatic art from Greece through Shakespeare.

621. History of the Theatre. 5 hours.

Prerequisite: Two senior division courses in English or classics or drama.

A study of the history of dramatic art from the Elizabethan period to Ibsen.

623. Theatre History from Mid-19th Century to the Present. 5 hours.

Prerequisite: Two senior division courses in English, speech, drama, classics, modern foreign language or comparative literature.

A study of the history of dramatic art from the mid-19th Century to the present.

625. History of Cinema. 5 hours.

A study of the development of the international film from its beginnings to the present, emphasis on cinema as a dramatic medium.

629. Play Analysis. 5 hours.

Prerequisite: Two senior division courses in English, drama, speech or permission of department.

A study of a method of analysis for dramatic scripts and an intensive examination of selected modern and period play scripts.

633. Period Dress, Manners and Movement for the Theatre. 5 hours.

An advanced survey of dress, manners, and movement of selected theatrical periods, concentrating on the dictates of dress and manners upon dance and movement.

644. Continental Drama, 1700-1900. 5 hours.

A history of dramatic literature and its presentation in continental Europe from the 18th Century through the Romantic Movement to the emergence of Realism.

645. Modern American Theatre. 5 hours.

A history of the American theatre from Eugene O'Neill to the present.

646. History of Dramatic Art in Italy. 5 hours.

Prerequisite: Must be registered in the Cortona program and participate on-site.

A study of dramatic art in Italy and Sicily from the Greek colonists to the present. Special emphasis on field trips to archaeological sites and special museums. Visits to contemporary performances. (Offered only in conjunction with summer quarter in Cortona, Italy.)

648. Afro-American Drama. 5 hours.

A study of the black theatre in America and its dramatic literature.

651. Graduate Research in Drama. 1-5 hours.

A survey of the field of drama including bibliography resources, types of research studies, and techniques involved.

665T. (ENG) Modern Drama. 5 hours.

See ENG 665T.

688. Readers' Theatre.

Prerequisite: Two senior division courses in English, education, speech or drama.

A study of the theories, techniques and conventions of Readers' Theatre.

700. Advanced Dramatic Writing. 5 hours.

Prerequisite: DRA 400/600 or equivalent.

A laboratory course for the advanced writer interested in developing dramatic properties and materials for contemporary markets.

701. Intermediate Acting. 5 hours.

Prerequisite: DRA 250, 301 or equivalent.

An intermediate course in acting intended for students not in the B.F.A. or M.F.A. program. Study in voice, movement and characterization. Practical work in Showcase productions.

705ABC. Applied Drama Laboratory. 1 hour each.
Individually assigned production and/or performance crew.

711. Theatre Management. 5 hours.
A critical examination of theatre management. A survey of the organization of theatre and promotional and managerial procedures.

730. Play Production for the High School Teacher. 5 hours.

Prerequisite: Two senior division courses in speech, English, drama or secondary education.

Techniques and methods for meeting the problems of play selection and play production in the secondary school. Suggested elective for all teachers of English in high schools.

731. Technical Problems. 5 hours. (Max. 10 hours.)

Prerequisite: DRA 334 or permission of department.

Advanced study of the theory and techniques of scenery construction with emphasis on materials, equipment, organization, and relations between the production staff. Course may be repeated once for credit with change of subject matter.

733. Stage Costume Design and Research. 5 hours.

Prerequisite: DRA 230 and 333 or permission of department.

Research sources and techniques with application to the design of costumes for dramatic presentations.

734. History of Costume and Decor. 5 hours.

Prerequisite: DRA 230 or equivalent.

An investigation into the styles of costuming, architecture, furnishings and ornamentation in significant theatrical periods.

735. Scene Design. 5 hours.

Prerequisite: Two senior division courses in art or drama or courses in advanced drafting or drawing.

The principles and techniques of scene design and scene painting. Development of floor plans, sketches and scaled models. Suggested elective for majors in the visual arts. (Lecture-laboratory course.)

736. Stage Lighting. 5 hours.

Study of problems of lighting for the stage and screen; lighting instruments, lighting control; operation of lighting equipment. Practical assignments in stage and film production.

737. Advanced Design Studio. 5 hours.

Prerequisite: DRA 533/733, 535/735, 536/736.

Advanced and intensive studio work in the methods of rendering designs and the creating of working drawings and models of scenery, costumes and lights for stage, film, and TV. Students work in individual projects with faculty aid and critique.

752. Actor Training I. 5 hours.

Prerequisite: DRA 250 or equivalent.

An intensive course in voice and body training. The course stresses the development and use of the voice for the actor.

753. Actor Training II. 5 hours.

Prerequisite: DRA 552/752 or equivalent.

An intensive course in voice and body training. The course stresses the development and use of the body for the actor.

754. Characterization for the Actor. 5 hours.

Prerequisite: DRA 553/753.

A study of role analysis and the problems and techniques of creating subtext with special relation to the actor's natural qualities.

755. Acting IV: Advanced Acting. 5 hours.

Prerequisite: DRA 554/754 or equivalent.

A study of the problems and techniques of acting in periods and styles through intensive scene study and performance.

756. Projects in Drama. 5-10 hours.

Prerequisite: Permission of department.

Advanced projects in dramatic performance.

757. Acting for TV and Cinema. 5 hours.

Prerequisite: DRA 555/755.

Advanced work in the special problems of applying acting technique to the demands of the modern media. Practical work in class and in actual productions with the vocal and physical problems of dramatic material designed for TV and cinema.

761. Play Direction Laboratory. 5 hours.

Prerequisite: DRA 560 or equivalent.

Course concentrates on the director's analysis of the script, the actor-director relationship and theatrical style. Each student directs a one-act play or short film.

763. Producing the New Script. 5 hours.

Prerequisite: Permission of department.

A course for directors, actors, and script-writers in the problems of producing the new script for stage, screen, or other media. Full collaboration of dramatic artists in producing a selection of new scripts by student writers.

764. Directing for the Cinema. 5 hours.

Prerequisite: DRA 560 or equivalent.

Lab-lecture course dealing with theories and

techniques of the art of directing dramatic cinema.

765. Directing Television Drama. 5 hours.

Prerequisite: DRA 560.

Advanced work in the special problems of applying directing technique to television drama. Theory and practical work in class and in commercial studios.

771. Play Directing: Periods and Styles. 5 hours.

Prerequisite: Permission of department.

Lab-lecture course emphasizing methods of directing plays from major periods, including Classical, Elizabethan, Neoclassical, and major styles, such as naturalistic, expressionistic, and absurdist.

773. Seminar in Stage Costume Design. 5 hours.

Prerequisite: DRA 533/733.

Advanced problems in historical styles for theatrical costumes. Special problems of construction of costume elements are explored.

775. Seminar in Advanced Scene Design. 5 hours.

Prerequisite: DRA 535/735.

Advanced study of techniques and resources of scene design, dealing with principles and practices of rendering and composition, design research and styles of scene design.

776. Seminar in Advanced Stage Lighting. 5 hours.

Prerequisite: DRA 536/736.

Advanced study of theory and practice of lighting, dealing with advanced forms of circuitry and control equipment, design and execution of light plots for complex stage productions and methods of lighting applied in varying forms of theatrical presentation.

780. (ART/MUS) Arts Development in the Contemporary Community. 5 hours.

Prerequisite: Permission of department.

The philosophical and practical issues facing the development of community arts. Modules of study include the arts and society, arts and the physical, social and political environment, publicity, marketing, grants-proposal writing, and fund raising.

792. Creative Dramatics for Children. 5 hours.

A study of the principles and techniques of creating improvised drama with children.

794. Introduction to Children's Theatre. 5 hours.

A course in the theories and techniques of children's theatre. The production procedure, including play selection, play analysis, and directing techniques, will be emphasized.

803. Seminar in Dramatic Writing. 5-10 hours.

Prerequisite: DRA 400/600.

Advanced study in creating and adapting scripts for stage, screen, or other media. May be repeated once for credit.

810. Seminar in Dramatic Theory. 5-10 hours.

Prerequisite: 30 hours of graduate credit and permission of department.

Advanced problems in the study of dramatic theory. Topics vary. May be repeated once with change of topic.

820. Seminar in Theater History. 5-10 hours.

Prerequisite: 30 hours of graduate credit and permission of department.

Advanced problems in the study of stage, cinema, and media history. Topics vary. May be repeated once with change of topic.

830. Seminar in Design for Stage and Screen.

Prerequisite: 30 hours of graduate credit and permission of department.

Advanced study of the problems of visual design for stage and screen.

840. Seminar in Dramatic Literature. 5-10 hours.

Prerequisite: 30 hours of graduate credit and permission of department.

Advanced problems in the study of dramatic literature for stage, screen and media. Topics vary. May be repeated once with change of topic.

900. Research Seminar and Special Problems in Drama and Theatre I. 1-5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Individually directed study under faculty supervision on research problems in drama and theatre.

901. Research Seminar and Special Problems in Drama and Theatre II. 1-5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Individually directed study under faculty supervision on research problems in drama and theatre.

921. M.F.A. Project. 3-5 hours.

930. Thesis. 1-15 hours.

EDUCATION

Gerald R. Firth
(Aderhold Building, South Campus)

The College of Education offers graduate degree programs at three levels in a variety of fields. These include: Master of Arts in education (see page 32); Master of Education (see page 42); Master of Art Education (see page 40); Master of Music Education (see page 44); Specialist in Education (see page 45); Doctor of Education (see page 46); and Doctor of Philosophy (see page 34). Many of these graduate programs are designed to meet Georgia Department of Education Certification requirements.

Although there are common elements in each of the degree programs, there is considerable flexibility to meet individual students' interests and backgrounds. Accordingly, details about specific admission or program requirements and options should be discussed with the appropriate department or division graduate coordinator. General information regarding degree programs available in the College of Education may be obtained from the Office of Graduate Admissions in the Graduate School or from the Office of Instruction in the College of Education.

The Board of Regents has also authorized Master of Education and Doctor of Education programs to be offered cooperatively by The University of Georgia and certain other institutions in Georgia. General information about these degree programs may be obtained from the Graduate School.

It is possible to earn credit toward the Master of Education or Specialist in Education degree in course work taken through Area Teacher Education Services. Up to a maximum of one-half of the Master's program (e.g., 30 quarter hours for MEd, Plan B) may be applied toward the degree requirements provided that the student has been or is later admitted to resident graduate study. Up to 20 quarter hours may be applied toward EdS requirements provided that the student has first been admitted to resident graduate study.

Six and seven hundred level courses are generally designed for students enrolled in a master's degree program. Eight and nine hundred level courses are generally designed for students pursuing specialist or doctoral

degrees. However, due to differences in background, many students may have a mixture of 600, 700, 800, and 900 level courses regardless of degree objective.

ADULT EDUCATION (EAD)

The 600 level courses are primarily for the master's degree candidate and the 900 level courses are primarily for the specialist and doctoral candidates.

600. Special Problems in Adult Education. 1-10 hours.

Specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

601. An Introduction to Adult Education. 5 hours.

A study of the organization of adult education incorporating such elements as the emerging discipline, history of the adult education movement, delivery systems, definitions of programs and organizations in the field.

604. (ERD) Adult Literacy-Basic Reading Needs. 5 hours.

See ERD 404/604.

607. Survey of Gerontology. 5 hours.

The course is a survey of social gerontology with an emphasis on adult education. It is designed for the practitioner and will attempt to provide background knowledge on aging and will deal specifically with program development and the involvement of older adults in educational programs.

660. Adult Teaching Strategies. 5 hours.

A review of teaching principles that influence adults in a learning situation and factors which influence ways in which adults respond to and participate in learning activities. Emphasis is placed on practical application of adult learning for organizing and conducting educational experiences for adults.

662. Administrative Practices in Adult Education. 5 hours.

Principles and practice of administering adult education programs. A functional study of the techniques of implementing supervision and analyzing organizational climate. The adult educator would be examined as a practitioner working within a bureaucratic framework.

700. Program Development in Adult Education. 5 hours.

Guided study and practice in developing educational programs for adults in selected

institutions (colleges, public schools, and others). Includes identifying needs, establishing objectives, and critically designing and evaluating programs in continuing education.

705. Methods in Adult Education. 5 hours.

The application of media, technology and group methods in adult classrooms with special attention devoted to the process of education.

765. Applied Project in Adult Education. 5 hours.

Prerequisite: Permission of department. Functional study of a topic or problem in education significantly related to the student's professional task.

809. (EPY) Adult Development and Instruction. 5 hours.

See EPY 809.

899. Research Seminar in Adult Education. 1-10 hours.

Each doctoral candidate is expected to attend a seminar during each quarter of residence. A minimum of three quarter hours of credit is required.

900. Curriculum Planning in Adult Education. 5 hours.

Adult Education programs in various agencies are studied and visited to acquaint the students with the agency's functions and programs.

901. Adult Education. 5 hours.

An overview course designed to introduce the student to the literature of adult education, the total and economic foundations of adult education and a brief history of adult programs.

930. Thesis. 1-15 hours.

960. Educational Research in Adult Education: Adult Learning. 5 hours.

Examines the social and psychological facets of adult learning, theories of learning and physiological aspects of aging, in terms of the adult student.

961. Research in Adult Education: Contemporary Trends and Social Problems. 5 hours.

The urban setting and its influence on the adult and on adult education programs is the focus of this course. Strategies of coping with the continuing movement of population from rural to urban are extensively treated.

962. Research in Adult Education: Administration. 5 hours.

Duties of the program administrator, the local coordinator and program directors are

discussed. Finance, record keeping and leadership are discussed in context of several agencies.

963. Critique of Educational Literature in Adult Education. 5 hours.

Research studies, dissertations and journal articles in adult education are reviewed by the doctoral student near the dissertation stage in his program.

970. Internship in Adult Education. 1-15 hours.

Prerequisite: Permission of department. A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

980. Practicum in Adult Education. 1-15 hours.

Prerequisite: Permission of department. Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

ART EDUCATION (EAR)

600. Special Problems in Art Education. 1-10 hours.

Prerequisite: Permission of department. Specialized training appropriate to the individual, involving intensive investigation and analysis into specific problems of art education.

699. Research Seminar in Art Education. 1-10 hours.

746. Internship in Teaching Art Education. 1-15 hours.

Prerequisite: Permission of department. Supervised internship in teaching art.

765. Applied Project in Art Education. 5 hours.

Prerequisite: Permission of department. Functional study of a topic or problem in education significantly related to the student's professional task.

899. Research Seminar in Art Education. 1-10 hours.

Prerequisite: Advanced graduate standing and permission of department. A seminar for art education graduate students dealing with research methodology, critiques of art education research and proposed research projects.

930. Thesis. 1-15 hours.

960. Educational Research in Art Education. 1-15 hours.

Prerequisite: Permission of department.

963. Critique of Educational Literature in Art Education. 5 hours.

Prerequisite: Permission of department.
Critical interpretation and evaluation of research and theoretical writing in the field of education. Each student will make critical reviews of significant education literature in the area of his specialization.

970. Internship of Art Education. 1-15 hours.

Prerequisite: Permission of department.
A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

980. Practicum in Art Education. 1-15 hours.

Prerequisite: Permission of department.
Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

(See also the following ART listings on pages 80-81.)

713. Crafts for Teachers. 5 hours.

716. Modeling and Carving. 5 hours.

723A. Special Problems in Art Education. 1-10 hours.

735. Philosophy of Art Education. 5 hours.

736. The Teaching of Art in the Secondary Schools. 5 hours.

737. Curriculum Development in Art Education. 5 hours.

739. Supervision of Art. 5 hours.

740. The Teaching of Art in the Elementary School. 5 hours.

741. History of Art Education. 5 hours.

743. Readings in Art Education. 5 hours.

COUNSELING AND HUMAN DEVELOPMENT SERVICES (ECP)

600. Special Problems in Counseling and Human Development Services. 1-10 hours.

Specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

602. Interpersonal Relationships. 5 hours.

Prerequisite: Two undergraduate courses in psychology or educational psychology.
Interpersonal skills are taught and demonstrated by the instructor. Students practice the

skills in role playing situation. Skills included are: physical attending, psychological attending, listening, perceiving surface and underlying feelings, basic responding skills, personalizing skills and initiating skills.

699. Research Seminar in Counseling and Human Development Services. 1-10 hours.

A seminar for master's level students in education dealing with proposed research projects and critiques of the literature.

700. Fundamentals of Guidance in Elementary and Secondary Schools. 5 hours.

An introduction to professional training for counselors and an opportunity for teachers to acquire an overview of guidance and counseling functions in the school program.

701. Individual Appraisal. 5 hours.

Principles of testing, types of scores, use of instruments and methods of assessing abilities, achievement levels, interests, attitudes, developmental variables, vocational skills, and personality characteristics. Use of test and non-test data in guidance and counseling.

702. Case Study Techniques. 5 hours.

Prerequisite: ECP 500/700, 501/701, or permission of department.

The school counselor's role as consultant and resource person for administrators, teachers, and parents. Skills in the techniques of collecting and assimilating data pertinent to the understanding of behavior and the implementation of appropriate intervention techniques to effect behavior change; practice in the use of case study techniques in a school setting.

703. Evaluation of Vocational Potential. 5 hours.

Prerequisite: ECP 501/701.

This course is designed to provide the student with the knowledge of vocational evaluation tools and techniques.

704. Interpretation of Vocational Evaluation Data. 5 hours.

Prerequisite: ECP 703.

The student will learn the process of objectively analyzing, synthesizing, and utilizing vocational evaluation data in the development of rehabilitation plans for the handicapped. The integration of vocational evaluation with occupational information systems will also be stressed.

706. Counseling the Alcohol and Drug Abuser. 5 hours.

Prerequisite: ECP 402/602.

The student will learn about the personal and social characteristics of alcohol and illicit

drug abusers. Counseling techniques which have been effective with drug and alcohol abusers will also be stressed.

715. Counseling the Grieving and Dying. 5 hours.

Prerequisite: ECP 402/602 or equivalent; permission of department.

Issues influencing the grieving and/or dying client are presented. Emphases are upon counseling techniques, their application and the counselor's personal feelings and attitudes toward death and how they affect the client.

765. Applied Project in Counseling and Human Development Services. 5 hours.

Prerequisite: Permission of department.

This course is designed to encourage individual research in an area pertinent to the field of counseling and human development services, with emphasis on increasing skills necessary to collect, interpret, and utilize research data.

888. Counseling. 5 hours.

Prerequisite: ECP 602 and permission of department.

An introduction to theoretical approaches in counseling and their application to settings in education, rehabilitation, community, and employment. Examination of the effects of differences in counselor/counselee roles, values, and goals.

899. Research Seminar in Counseling and Human Development Services. 1-10 hours.

Prerequisite: Permission of department.

A research seminar for individual or groups of doctoral students dealing with proposed psychological, vocational, educational, and developmental programs and projects.

901. Vocational Development. 5 hours.

Prerequisite: Permission of department.

Career development conceptual formulations; career information in teaching and counseling; sequential decision-making processes and strategies; job placement skills; nature, sources, and functions of information available to assist individuals in formulating goals and comprehensive plans.

902A. Pupil Personnel Services. 5 hours.

Prerequisite: Four graduate courses in education, psychology, sociology.

Analysis of the interrelated functions of the several specialized pupil personnel workers, with particular reference to their role in the total educational program, and the principles governing the scope of such services in adapting them to public educational institutions of varying size.

902B. Organization and Leadership of Pupil Personnel Services. 5 hours.

A course for practicing and potential directors of pupil personnel services. An examination of organizational patterns and supervisory responsibilities of the director in the development and operation of a comprehensive program of pupil personnel services.

903. Principles of Student Personnel in Higher Education. 5 hours.

Prerequisite: Permission of department.

An introduction and orientation to the field of student affairs work with emphasis upon its philosophical, psychological, and sociological foundations and primary objectives and functions within institutions of higher learning. Special attention is given to the personal development of college students.

904. Advanced Theories of Counseling. 5 hours.

Prerequisite: ECP 888 and permission of department.

An examination of the various theories of counseling and the implications for the practicing counselor. Specific attention is focused upon selected aspects of the several theories with consideration of the similarities and differences.

905. Principles of Group Guidance. 5 hours.

Prerequisite: Permission of department.

Study and practice of basic approaches to group procedures in relation to group goals, objectives, and dynamics and the effect that particular group procedures have upon the facilitation of individual and group development.

906. Theories and Procedures of Group Counseling. 5 hours.

Prerequisite: ECP 905 or the equivalent and permission of department. (Concurrent enrollment for two-quarter sequence with ECP 986.) Basic group counseling theories with emphasis on techniques and application, ethical responsibilities, and current trends with experiential opportunities provided.

911. Practices in Student Personnel in Higher Education. 5 hours.

Prerequisite: ECP 903 and permission of department.

Skill building and competency attainment through experiential laboratory training in specific functions and practices of student affairs professionals in institutions of higher learning.

913. Seminar on the College Student. 5 hours.
Prerequisite: Six graduate courses in education, psychology, sociology.

Examination of the ecology of the college student in America today. Recent research and literature on college student development, personality characteristics, values, and cultures is emphasized. Especially relevant for those who plan to hold teaching or administrative positions in institutions of higher learning.

920. Introduction to Rehabilitation Counseling. 5 hours.

This course is designed to give the student a comprehensive introduction to Vocational Rehabilitation. Among the topics presented are: (1) philosophy of rehabilitation; (2) historical development of vocational rehabilitation; (3) legislative acts and amendments; (4) organizational structure of vocational rehabilitation; (5) vocational rehabilitation programs and specialty areas; (6) cooperating agencies and community resources; (7) referral and delivery systems; (8) incidence of disability; (9) the rehabilitation process; (10) client study; (11) professional organizations; and (12) professional issues and ethics.

921. Medical and Psychological Aspects of Disability. 5 hours.

Prerequisite: ECP 920 or EXC 500/700, PSY 423 or 451/651, or SOC 427/627.

A broad spectrum view of the incidence and nature of medical and psychological disabilities and their functional limitation as related to vocational objectives. Emphasis is given to chronic disabling conditions, treatment, functional limitations, prognosis, and vocational significance of these disabilities. The medical and psychological aspects are presented by staff and consulting specialists. The specialties covered include cardiology; chest disease; internal medicine; orthopedics, neurology and psychiatry, with special attention given to residual function, treatment methodology, prognosis, and counselor-consultant relationships.

930. Thesis. 1-15 hours.

950. Foundations of Counseling Psychology. 5 hours.

Prerequisite: ECP 888 or equivalent; admission to counseling psychology program.

The course will focus on a study of the history, development, and current issues related to the profession of counseling psychology. Special topics will include philosophical assumptions, legal and ethical considerations, and implications of research topics.

960, 961, 962. Educational Research in Counseling and Human Development Services. 5 hours each.

Prerequisite: Permission of department.

This course is designed for advanced graduate students to accommodate research in current psychological, vocational, educational and developmental trends, unique interests and special research efforts.

963. Critique of Educational Literature in Counseling. 5 hours.

Prerequisite: Permission of department.

A review and critique of the professional literature in counseling with emphasis upon selection criteria and procedures for counselor preparation; programs and standards for counselor preparation; assessment of counselor performance; ethical and legal considerations; para-professionals in counseling; and status of research in counseling.

970. Internship in Counseling and Human Development Services. 1-15 hours.

Prerequisite: Permission of department.

An advanced supervised experience in an applied setting.

973. Research in Counseling and Human Development Services. 1-15 hours.

An advanced individual research internship in psychological counseling and human development services.

980, 981, 982. Practicum in Counseling and Human Development Services. 5 hours each.

Prerequisite: Permission of department.

Supervised psychological counseling practice in a setting consistent with the student's professional goals.

986. Practicum in Group Counseling. 5 hours.

Prerequisite: ECP 905 or the equivalent and permission of department. (Concurrent enrollment for two quarter sequence with ECP 906.) Supervised practice in group counseling with opportunities for practicum experiences in diverse settings.

987, 988, 989. Practicum in Student Personnel in Higher Education. 5 hours each.

Prerequisite: ECP 903 and permission of department.

Supervised practice within the student affairs program at the university or other institutions of higher learning. Practical work and observation experience is offered with supervision by members of the student affairs staff. A weekly seminar involving all practicum students is held under the direction of the faculty practicum coordinator.

990. Process of Counseling Supervision. 1-10 hours.

Prerequisite: ECP 980-981; doctoral student and field experience. Corequisite: ECP 904 or 906 or 963.

Each student will supervise two masters level students in ECP 980 (Practicum). The supervisory sessions will be recorded and critiqued in the supervision course. An updated and systematic understanding of the problems of supervision will be accomplished through a review of the literature.

CURRICULUM AND SUPERVISION (ECS)

600. Special Problems in Curriculum and Supervision. 1-5 hours.

Prerequisite: Permission of department.

Specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

672. Programmed Instruction. 5 hours.

Prerequisite: PSY 101 or EPY 304.

Theory, evaluation and writing techniques, with practice in writing a program.

702. Fundamentals of Curriculum. 5 hours.

Prerequisite: Four courses in education.

Study of the nature, function, and evolution of curricula in education.

704. Trends and Issues in Curriculum. 5 hours.

Trends in curriculum design and content and factors which influence curriculum innovations.

705. Problems of Teaching Curriculum and Supervision. 5 hours.

Instructional procedures and evaluation of teaching in terms of student growth.

706. Trends and Issues in Instruction. 5 hours.

Exploration of status of instruction derived from literature, research and practice. Consideration of positions under discussion or debate in the field.

707. (EAV) Instructional Design and Development. 5 hours.

See EAV 707.

708. Curriculum Planning. 5 hours.

Prerequisite: ECS 702.

Application of principles underlying curriculum improvement and operational strategies with emphasis on the organization of schools and school systems.

709. Fundamentals of Instruction. 5 hours.

Study of basic nature of classroom instruction, key elements of the instructional process, organizing operations, and skills for evaluating and improving instruction.

710. Computers in Education. 5 hours.

An overview of the role of computers in education. An examination of computer applications as they relate to specific teaching/learning operations and educational functions.

721. Introduction to Supervision. 5 hours.

An introduction to the study of school supervision and its contribution to the total school program.

722. Supervision of Instruction. 5 hours.

Prerequisite: ECS 721 or basic course in supervision.

A comprehensive study of the basic concepts of supervision and ways and means of improving instruction through supervision.

765. Applied Project in Curriculum, Instruction and Supervision. 5 hours.

Prerequisite: Approval of program of study leading to Specialist in Education degree.

Project involving a topic or problem in curriculum, instruction or supervision related to the student's professional task. Activities extend over more than one quarter and are based on a proposal for study which must be approved by the faculty. A written product reporting the activities of the study will be prepared.

802. Comparative International Curricula. 5 hours.

A comparative study of curricula in elementary, secondary and higher education in selected representative types of foreign countries in a contemporary and historical framework.

803. (EAV) Instructional Technology. 5 hours.

Prerequisite: EAV 707 or one graduate course in ECS or EAV.

Study of both processes and products of technology as applied to curriculum and instruction. Consideration of the impact of instructional technology to date and its potential for the future.

804. Curriculum Theory. 5 hours.

Prerequisite: Two courses in curriculum and permission of department.

The identification, analysis, and synthesis of knowledge basic to the development of curriculum theory with consideration for the design of curriculum strategies.

823. Trends and Issues in Supervision. 5 hours.
Prerequisite: Two courses in supervision and permission of department.

Identification and investigation of problems in supervision; research and experimentation in the use of supervisory procedures.

824. Group Development. 5 hours.

Prerequisite: Permission of department.

Group process and problems of group work, improving behavioral skills in group leadership and membership roles, and improving group planning and execution of educational programs.

825. Leadership for Staff Development. 5 hours.

Prerequisite: ECS 721 and 722.

Procedures and patterns for comprehensive planning and systematic implementation of staff improvement programs with emphasis on organization development and management by leadership personnel.

899. Research Seminar in Curriculum and Supervision. 1-10 hours.

Prerequisite: Admission to doctoral study.

Analysis of possible areas of investigation for doctoral dissertations, description of research proposals and criticism by faculty members and fellow students with opportunity for refinement prior to formal presentation. Each doctoral candidate is expected to attend a seminar during each quarter of residence. A minimum of three quarter hours of credit is required.

900. Curriculum Development, K-12. 5 hours.

Analyses of existing theoretical models for curriculum development, the generation of new models, and the assessment of the effectiveness of the models for evaluating and implementing proposals for program change and for the determination of additional program needs.

901. Instructional Theory. 5 hours.

Prerequisite: ECS 709.

Advanced seminar for students to interpret existing theory and develop new theory. Study of research on present alternatives, appropriate developments and process of creating instructional theories.

902. Curriculum Development, Higher Education. 5 hours.

Overview of models for program improvement at colleges and universities in relation to typical organizational patterns and consideration of innovative practices.

904. (EPY) Problems in the Evaluation of Instruction. 5 hours.

See EPY 904.

925. Supervision Theory. 5 hours.

Prerequisite: Two courses in supervision and permission of department.

Interdisciplinary study of forces impinging upon education and the implications of these findings for supervision.

926. Instructional Systems Analysis. 5 hours.

Prerequisite: Two courses in instruction and permission of department.

Investigation of instructional problems as a basis for improvement or redesign. Study of instruction through consideration of components.

930. Thesis. 1-15 hours.

960. Educational Research in Curriculum and Supervision. 1-15 hours.

Independent investigation to provide advanced students with opportunities to probe areas of specialized interests or need and to encourage exploration by doctoral students of potential topics for dissertation research.

963. Critique of Educational Literature in Curriculum and Supervision. 5 hours.

Critical examination, interpretation and evaluation of significant current and classical writing in the fields of curriculum, instruction and supervision with particular emphasis on research findings. Each doctoral student is expected to focus reviews in the area of specialization.

970. Internship in Curriculum and Supervision. 1-15 hours.

A period of guided learning opportunities involving students during the initial year of experience in leadership positions for curriculum, instruction and supervision. This phase of on-the-job preparation in which the student tests, practices and applies principles and processes is closely monitored by a member of the faculty.

980. Practicum in Curriculum and Supervision. 1-15 hours.

A period of guided learning opportunities allowing students to test principles in the field and to relate theory to practice in actual institutional setting. Activities are approved and supervised by a member of the faculty.

EDUCATIONAL ADMINISTRATION (EAS)

699. Research Seminar in Educational Administration. 1-10 hours.

A seminar dealing with proposed research projects and critiques of the literature in educational administration.

765. Applied Project in Educational Administration. 5 hours.

Functional study of a topic or problem in education significantly related to the student's professional task.

899. Research Seminar in Educational Administration. 1-10 hours.

Each doctoral candidate is expected to attend a seminar during each quarter of residence. A minimum of three quarter hours of credit is required.

900. Introduction to School Administration. 5 hours.

An introduction to the study of school administration and its contribution to the total school program.

901. Administration of Elementary Schools. 5 hours.

Duties of the school principal in the organization and administration of the elementary school program.

902. Basic Theories of Educational Administration. 5 hours.

Study of current theories of organization and their application to educational administration.

903. Administration of the School Curriculum. 5 hours.

Study of the basic nature of man and how to organize and administer school program consistent with man's basic nature.

904. School Data Processing. 5 hours.

An application of data processing to school problems, such as master scheduling, records, and accounting.

905. Administration of State and Local School Systems. 5 hours.

Fundamentals of state and local public school organization and administration; relation to state and local school systems to federal agencies.

906. Personnel Administration. 5 hours.

Principles and policies governing employer-employee relationships in the public schools.

907. The School Plant. 5 hours.

An overview of the relationship of the school's

physical environment to the educational program and its impact on pupil and teacher behavior.

909. Economics of Education. 5 hours.

Economic forces, including those involved in financing public schools, are examined.

910. Public School Business Management. 5 hours.

An overview of business functions in school administration with emphasis given to the budgeting process.

911. School Law. 5 hours.

Legal principles applicable to public education, the legal structure of the public school system; legal problems related to teacher and student personnel.

913. Trends and Issues in School Administration. 5 hours.

Study of selected problems and issues in educational administration.

914. The School As a Social System. 5 hours.

Education viewed as one social system within the matrices of other social systems.

915. Administration of Secondary Schools. 5 hours.

An examination of the principal's influence on the efficiency of secondary school programs.

916. Administration of Community Education—Focus on Community School. 5 hours.

An overview of the community school, its history, purposes, functions; and an investigation of the problems and challenges in the administration of community education.

917. Seminar in School Law. 5 hours.

Prerequisite: EAS 911 or permission of department.

Provides an opportunity for an in-depth study of specific areas of school law mutually agreed upon by the student and the instructor.

918. Educational Facilities Management. 5 hours.

Prerequisite: Graduate standing in the College of Education.

An overview of concepts, processes and practices in the operation, financing, maintenance, modernization and construction of the educational plant.

919. Planning for Education. 5 hours.

The relationship of planning concepts, principles, and approaches to system level administration including the methods and techniques of planning for a comprehensive educational program.

920. Planning and Programming of Educational Facilities. 5 hours.

Planning principles and strategies are reviewed; principles, concepts, processes and practices of planning and programming educational facilities are studied.

921. Educational Policy Analysis. 5 hours.

Prerequisite: EAS 900 or equivalent.

A study of the educational policy process, including school boards, pressure groups and their roles in getting issues to government. Intended to acquaint students with educational policy research methodology.

925. Administration of Middle Schools. 5 hours.

Prerequisite: EAS 900 or permission of department.

Duties of the school principal in the organization and administration of middle schools.

929. Politics of Education. 5 hours.

Examines local, state, federal and non-governmental political forces operating on the public schools.

930. Thesis. 1-15 hours.

935. Educational Resource Management. 5 hours.

Study of the principles, methods and practices of systematic approaches to educational resource management with particular emphasis on the sets of processes involved in program budgeting and management by objectives in educational administration.

939. School-Community Relations. 5 hours.

This course is designed to create awareness among school administrators of educational problems which arise in school desegregation and how to cope with them effectively.

960. Educational Research in Educational Administration. 5 hours.

Basic introduction to research in educational administration including review and critical evaluation of literature, types of measurement devices, types of research, tools of research, and university resources.

961. Educational Research in Educational Administration. 5 hours.

Application of appropriate procedures to research questions in educational administration. Includes problem determination, development of hypotheses, computer analyses of data, and interpretation of results.

962. Educational Research in Educational Administration. 5 hours.

Exploration and explication of contemporary research in educational administration. Em-

phasis is placed on interpretation of both the educational significance and the generalizability of research findings.

963. Critique of Educational Literature in Educational Administration. 5 hours.

Critical interpretation and evaluation of research and theoretical writing in the field of educational administration.

970. Internship in Educational Administration. 1-15 hours.

Prerequisite: Permission of department.

A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

980. Practicum in Educational Administration. 1-15 hours.

Prerequisite: Permission of department.

Supervised practical application (in a classroom or clinic) of previously studied theory.

EDUCATIONAL MEDIA AND LIBRARIANSHIP

EDUCATIONAL MEDIA (EAV)

600. Problem in Educational Media. 1-10 hours.

Prerequisite: Permission of department.

Independent study of selected problems in media.

605. Selection and Utilization of Interactive Instructional Materials. 5 hours.

Prerequisite: EAV 500/700 or permission of department.

Selection and utilization of existing interactive instructional materials with emphasis on the varied formats and techniques used in computer based instruction.

699. Research Seminar in Educational Media. 1-10 hours.

Prerequisite: Media utilization course or permission of department.

This master's level seminar is a critical review of the literature and of proposed research projects in educational media.

700. Utilization of Educational Media. 5 hours.

Survey of educational communications media and technology; characteristics of media, the teaching-learning process, school media programs; sources evaluation and utilization of media teaching.

701. Design and Production of Educational Media. 5 hours.

Laboratory course in design and production of instructional media: transparencies, slides, tapes and other media for instruction.

702. Educational Television Production. 5 hours.

Prerequisite: EAV 501/701 or permission of department.

Design, production, and use of videotapes. Laboratory experiences with closed circuit, portable television equipment suitable for school use.

703. Educational Media Production, Advanced. 5 hours.

Prerequisite: EAV 501/701, or permission of department.

Instructional design of media materials including various types of graphic, photographic, and audio materials.

704. Management of Educational Media Services. 5 hours.

Prerequisite: EAV 500/700.

Problems of design and development of mediated learning systems and learning resource centers. Planning, organizing, budgeting media support systems.

706. Selection and Evaluation of Educational Media. 5 hours.

Prerequisite: EAV 500/700.

Study of sources, strategies and criteria for evaluation of non-book media leading to development of critical judgments regarding the educational value of such materials.

707. (ECS) Instructional Design and Development. 5 hours.

Prerequisite: ECS 709 or EAV 500/700.

Examination of strategies for the design of instructional situations for specified objectives and learner characteristics through organizing content, planning teaching-learning strategies, selecting resources, and identifying evaluation techniques.

720. (EIA) Photography in Instruction. 5 hours.

Three lectures and 2-hour lab periods.

Prerequisite: EAV 501/701 or permission of department.

Basic principles, skills, and techniques of photography and their application to problems of instruction. Areas covered include introductory skills in camera and film use, darkroom procedures, processing and printing in black and white and color. Course designed for educational media, industrial/graphic arts, and other majors in education. Enrollment limited. Students must supply own materials.

721. (EIA) Graphic Technology. 5 hours.

Prerequisite: Permission of department.

Demonstrations, lectures and laboratory sessions designed for majors in Educational Media and Industrial Arts with competencies in graphic technology. Emphasis is placed on layout, image assembly, photo conversion, platemaking, offset and screen printing, binding, finishing.

722. (EIA) Advanced Graphic Photographic Techniques. 5 hours.

Prerequisite: EAV/EIA 520/720 or 521/721 or permission of department.

An advanced projects course in graphic and photographic production. Through lectures, demonstrations and lab experiences, students will develop advanced graphic/photographic techniques for the production of educational materials.

746. Internship in Teaching Educational Media. 1-15 hours.

Prerequisite: Permission of department.

Each student will prepare, conduct, and evaluate lessons under the supervision of a faculty member.

750. (EXC) Instructional Media for Exceptional Learners. 5 hours.

See EXC 750.

765. Applied Project in Educational Media. 5 hours.

Prerequisite: Permission of department.

Each student will plan and conduct a study in educational media that relates to the student's professional goals.

803. (ECS) Instructional Technology. 5 hours.

See ECS 803.

960. Educational Research in Educational Media. 1-15 hours.

Prerequisite: Four courses in educational media and advanced graduate standing.

The course is a study of the various methods used in research in educational media.

LIBRARY EDUCATION (ELE)

600. Special Problems in Library Education. 1-10 hours.

The course concentrates on current problems in library education.

602. Reference Materials and Services. 5 hours.

Nature of reference services and knowledge of all types of materials: content, evaluation, organization and utilization.

603. Technical Services. 5 hours.

Aims and techniques for organizing a media collection. Includes introductory classification of materials, descriptive cataloging, use of preprinted catalog cards, centralized acquisition and processing services, procedures and operations essential for internal organization of the media center.

604. Administration of School Media Center. 5 hours.

Study of the organization, services, functions, and administration of the school media center.

701. Building Library Media Collections. 5 hours.

A study of media selection aids, book reviewing, reading lists, publishers, and publishing; standards useful in building and balancing a collection; methods of reading guidance.

702. The Media Center and the Instructional Program. 5 hours.

Emphasis on building a comprehensive media program of instructional functions and services which support the total curriculum of the school. The role of the media center and the media specialist in integrating media into the school's instructional program.

704. Data Processing in Libraries. 5 hours.

An introduction to the basic principles of system analysis and design; the application of automation to the library functions of acquisition, organization, and circulation of materials in all media; the application of automation to information storage, retrieval, and dissemination.

706. Information Center Management. 5 hours.

Exploration in depth into the information transfer processes through the operation of information centers and libraries; intensive study of the parts of information centers and the techniques used; state-of-the-art and expectations for the future.

711. (EEN) Children's Literature in the Elementary School. 5 hours.

See EEN 711.

712. (EEN) Guiding the Reading of Children. 5 hours.

Prerequisite: One course in children's literature.

Study of the development of children's literature to the present time; includes principles and techniques in guidance of children's reading interest; selection of books for elementary school libraries. Extensive reading and evaluation of children's books.

713. (EEN) Folk Literature in the Curriculum. 5 hours.

See EEN 713.

715. Professional Principles and Practices. 5 hours.

Prerequisite: ELE 404/604.

An introduction to professional principles and practices, including education, philosophy, ethics, responsibilities, professional organizations, and the literature of the profession; the role of information science in society, types of media centers, libraries, and services.

716. Guiding the Reading of Young Adults. 5 hours.

Study of current investigations and research concerning interests and habits of young adults; a critical study of standard and current books with aids and criteria for selection; the use of books for curricular and leisure needs; extensive examination and reading of books and materials.

717A. Guides to Subject Fields. 3 hours.

Prerequisite: ELE 402/602.

Survey of the major guides to the various subject fields; humanities, social sciences.

718. Supervision of School Media Programs. 5 hours.

Prerequisite: For EdS students only.

Survey of leadership service for the development, improvement, evaluation, and supervision of school media centers; emphasis on organization and coordination of the total media program within the school system; methods and problems of supervision, human relations, public relations, and communication.

719. Developments in Information Technologies. 5 hours.

History and development of recorded knowledge through the ages. Emphasis on the format, the organization, and preservation of information from earliest history to the trends and needs of information storage and retrieval in modern society.

724. Advanced Classification and Cataloging. 5 hours.

Prerequisite: ELE 403/603 or permission of department.

Theories of classification and comparison of major classification systems, including Library of Congress Classification. Attention is given to special types of materials, e.g., non-print, three-dimensional, and other specialized forms of information. Current trends in book catalogs, centralized processing techniques, and computerized bibliographies networks are introduced.

725. Information Systems and Networks. 5 hours.

Prerequisite: ELE 402/602 and permission of department.

Development and current practices in the design, management and evaluation of information systems and networks. Emphasis is given inter-library cooperative networking systems and reference/information systems including computerized information storage and retrieval.

746. Internship in Teaching Library Education. 5 hours.

Prerequisite: Permission of department.

Each student will prepare, conduct, and evaluate lessons under the supervision of a faculty member.

760. Educational Research in Library Education. 5 hours.

This master's level seminar is a critical review of the literature and of proposed research projects in library education.

765. Applied Project in Library Education. 5 hours.

Prerequisite: Permission of department.

Each student will plan and conduct a study in library education that relates to the student's professional goals.

770. Internship in School Media Center. 5 hours.

Practicum in selected school media centers under the supervision of college staff and qualified personnel in school. Required of students without school media center experience to meet initial certification requirements.

962. Educational Research in Library Education. 5 hours.

Prerequisite: Four courses in educational media and advanced graduate standing.

The course is a study of the various methods used in research in library education.

EDUCATIONAL PHILOSOPHY (EPH)

601. Philosophy and Education. 5 hours.

Prerequisite: Eligibility for teacher certification. A philosophical examination of teaching and learning, curricula, moral values, and social and political aspects of education.

602. History of American Public Education. 5 hours.

Prerequisite: Eligibility for teacher certification. An examination of the rise, growth, and transformations of American public schools

and higher education from the American Revolution to the present. Consideration will be given to the influence of economic, social, political, and intellectual conditions upon public education as well as to the practices of public education institutions.

728. (SOC) Sociology of Education. 5 hours.
See SOC 528/728.

801. Philosophy of Education. 5 hours.

A critical examination of philosophical questions concerning education.

802. History of Education. 5 hours.

Persistent and recurring problems of education in Western culture.

804. Pragmatism and Education. 5 hours.

A critical examination of the educational writings of William James, Charles S. Pierce, and John Dewey.

806. Social and Political Philosophies of Education. 5 hours.

A critical study of social and political philosophies of education, such as those of communism, facism, and various types of democracy.

807. Ethics and Education. 5 hours.

Theories of value and evaluation, ethical discourse and argument, and other uses of ethics in educational writings.

808. Contemporary Philosophies of Education. 5 hours.

A study of recent development in the field as revealed in current literature.

930. Thesis. 1-15 hours.

963. Critique of Educational Literature in Educational Philosophy. 5 hours.

Critical interpretation and evaluation of research and theoretical writing in the field of philosophy of education.

EDUCATIONAL PSYCHOLOGY AND MEASUREMENT AND EDUCATIONAL RESEARCH

Within the Department of Educational Psychology is the School Psychology program. Graduate study is available in School Psychometry (MEd), School Psychology (EdS) and at the doctorate level in School Psychology (EdD). The programs of study have been developed to meet the professional standards of the National Association of School Psychologists and the American Psychological Association for the preparation of School Psychologists. All programs lead to

certification in the state of Georgia and the doctoral program prepares psychologists who may wish to pursue licensure as an applied psychologist.

EDUCATIONAL PSYCHOLOGY AND MEASUREMENT (EPY)

600. Special Problems in Educational Psychology. 1-10 hours.

May be independent study with variable credit with permission of department or assembled class especially developed to study some problem or set of problems in educational psychology with specified credit and prerequisites.

601. Psychology of Early Childhood. 5 hours.

Prerequisite: EPY 304 or equivalent.

Interests, needs, and abilities of children; evaluation of their total development.

680. Foundations of Cognition for Education. 5 hours.

Prerequisite: EPY 304 or PSY 101 or equivalent.

Cognitive representational systems and cognitive processes are discussed. "Cognitive analyses" of school tasks are performed. The course emphasizes application for cognitive psychology to such school domains as reading, writing, speaking, memory, inductive and deductive reasoning, and problem-solving.

699. Research Seminar in Educational Psychology. 1-10 hours.

A seminar for master's level students in educational psychology dealing with proposed research projects and critiques of the literature.

700. Educational Tests and Measurements. 5 hours.

Prerequisite: Four courses in education.

Nature and function of measurement in education. Teacher-made and standardized tests and scales. Introductory statistical concepts of measurement.

706. Classroom Learning Problems of Disadvantaged Children. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: EPY 304 or equivalent.

Psychological characteristics of economically, culturally and educationally disadvantaged children and youth, special classroom learning problems and classroom learning problems in integrated schools.

711. Characteristics of Gifted Children and Youth. 5 hours.

Prerequisite: EPY 304 or equivalent.

Psychological characteristics of gifted chil-

dren and youth including studies of the lives of eminent persons, empirical studies of gifted children and youth today, and genetic studies of genius.

765. Applied Project in Educational Psychology. 5 hours.

Prerequisite: ERS 401/601, 411/611, and 812.

Functional study of a topic or problem in educational psychology, measurement, or research design.

800. Educational Measurement Theory. 5 hours.

Prerequisite: EPY 500/700 and ERS 411/611, 812, or equivalents.

Treatment in depth of concepts of reliability, validity, error of measurement, score variance, and test analysis, with emphasis on theoretical issues.

802. Theories of Child Development. 5 hours.

A survey of recent literature in the field of child development with special emphasis on early childhood experiences at home and at school, peer relationships, socio-cultural influences, and determinants of self-concepts.

805. Assessment of the Preschool and Primary Grade Child. 5 hours.

Prerequisite: One graduate course in measurement, and one graduate course in either child development or learning theory.

An in-depth and critical appraisal of numerous intelligence, perceptual-motor, and conceptual tests geared for children in the preschool and primary age range (2 to 7 years). View of Hebb, Montessori, Piaget, Gesell, and others are integrated to provide a theoretical framework for evaluating the tests.

809. (EAD) Adult Development and Instruction. 5 hours.

Prerequisite: EPY 404 or EAD 601 or GNT 600.

An overview of physical, intellectual, moral, and social aspects of adulthood is provided. Furthermore, cognitive and motivational processes of young, middle age, and older adults respectively, are detailed. Strategies intended to enhance formal and informal learning activities of adults are discussed.

810. Advanced Adolescent Psychology. 5 hours.

Evaluation of adolescent development; review of research related to the adolescent; and assessment of theoretical positions in the psychology of the adolescent.

815. Advanced Educational Psychology. 5 hours.

Prerequisite: PSY 101, EPY 304 and two senior division courses in psychology or education.

Applications of the scientific findings of psychology to the more complex problems of the educative process.

816. Problems in Educational Psychology. 5-20 hours.

Prerequisite: EPY 304.

Specialized training in selected areas of educational psychology, e.g., individual differences, motivation, evaluation procedures, creativity, pre-school testing, etc.

817. (ERD) Psychology of Reading. 5 hours.

See ERD 817.

818. Psychology of Classroom Learning. 5 hours.

Prerequisite: EPY 304 and three additional courses in the area of psychology.

Analytical study of learning activities in the classroom, with reference to the learning of school subjects. The focus is on the learning process. Theories and principles of learning are related to classroom situations.

819. Cognitive Processes and Education. 5 hours.

Prerequisite: A course in learning theory or classroom learning.

Theories of cognitive organization and functioning, verbal learning, concept formation, thinking and problem-solving in relation to educational programs and teaching methods and materials.

820. Learning Difficulties of Gifted Children and Youth. 5 hours.

Prerequisite: A course in learning theory or classroom learning.

Special learning problems of intellectually gifted and school learning difficulties of children specially gifted in research, art, music, drama, and mechanics.

822. Creative Thinking. 5 hours.

Prerequisite: Permission of department.

Survey of theory and research concerned with the creative process, creative problem solving, the creative thinking abilities and their measurement, the creative personality, and environmental and classroom conditions that facilitate creative functioning and development. Special emphasis on mastery of the creative problem solving method and practice in its applications to educational problems.

823. Strategies and Materials for the Gifted. 5 hours.

Prerequisite: EPY 711 or permission of department.

Teaching strategies particularly suitable for the gifted (problem-solving, productive thinking, inquiry, independent research, etc.) and

the design and evaluation of gifted programs will be investigated in depth. Related materials will be examined and new materials developed.

824. Sociodrama: Instructional Procedure and Problem Solving Process. 5 hours.

Prerequisite: Permission of department.

Basic theory, demonstration, and practice of sociodrama for the preparation of sociodrama directors both in instructional and mental health roles. Sociodrama is presented as a creative problem solving procedure and emphasis is on standard production techniques and new production and audience involvement techniques invented by the instructor. Experience is given in employing these techniques to facilitate the production of alternative solutions, evaluate these solutions, and implement the best solutions. Production techniques include the soliloquy, double ego, multiple doubles, role reversal, etc. Special audience techniques are taught for the sociometric analysis of problems.

825. Group Dynamics. 5 hours.

Prerequisite: Permission of department.

Examination of major ideas about dynamics of group behavior and their educational implication. Laboratory in T-Group methods, creative problem-solving groups, and the conduct of experiments in group interaction.

826. Systematic Observation Interpersonal Behavior. 5 hours.

Prerequisite: EPY 825 or course in social psychology.

Observation and measurement of behavior in educational groups, such as classroom, playground, and therapy groups and administrative and staff groups.

827. Studies of Non-Verbal Behavior. 5 hours.

Prerequisite: EPY 825, 826 or permission of department.

Analysis, evaluation and replication of leading studies of dyadic and group verbal and non-verbal interaction. The focus is on the communicative aspects, both intentional and unintentional, of major non-verbal channels.

830. Introduction to School Psychology. 5 hours.

Prerequisite: Ten quarter hours in educational psychology.

History, functions, duties, and responsibilities of psychologists in the schools.

831. Applied Behavior Analysis I. 5 hours.

Prerequisite: Admission to graduate work in psychology or allied fields.

Emphasizes the theoretical and research underpinnings for the application of behavioral techniques in the assessment of

difficulties in the classroom. Field experiences with a variety of observational techniques.

832. Applied Behavior Analysis II. 5 hours.

Prerequisite: EPY 831.

Emphasis on the application of assessment procedures in the development of behaviorally-oriented intervention strategies. Field experience in the classroom is integrated with didactic material.

833. Consultation Processes in Educational Settings. 5 hours.

Prerequisite: EPY 910 and 911 or permission of department.

The course focuses on the problems inherent in interprofessional communication, particularly communication between school psychologists and teaching professionals.

834. School Neuropsychology. 5 hours.

Prerequisite: EPY 910, PSY 480/680 or permission of department.

Theory, techniques and issues of neuropsychological assessment with the developmentally disabled or learning disabled student will be covered. Primary emphasis will be on understanding the theory, issues and limitations of neuropsychological assessment with school-age children.

899. Research Seminar in Educational Psychology. 1-10 hours.

Each doctoral candidate is expected to attend a seminar during each quarter of residence. A minimum of three quarter hours of credit is required.

902. Construction of Educational Tests. 5 hours.

Prerequisite: EPY 500/700 or PSY 415/615, and EPY 811 or PSY 658.

Construction of educational tests, including criterion selection and development, test specifications, item construction, item analysis, test validation, cross-validation, and standardization.

904. (ECS) Problems in the Evaluation of Instruction. 5 hours.

Interpretation of the results secured from evaluative techniques.

906. Assessment of Gifted Children and Youth. 5 hours.

Prerequisite: EPY 500/700.

Theories of mental abilities; measurement of mental abilities in relation to high levels of giftedness; assessment of special abilities in music, art, writing, dramatics, and other special fields.

908. Advanced Educational Measurement Theory. 5 hours.

Prerequisite: EPY 800 and ERS 813 or equivalents.

Classic test theory; true score models; latent trait theory; true score and ability estimation; development of statistics of test construction.

910. Individual Clinical Assessment I. 5 hours.

Prerequisite: EPY 500/700 or equivalent.

Administration and interpretation of the most commonly used intelligence tests with school-age children. Emphasis is on developing an understanding of basic theoretical assumptions associated with intellectual assessment as part of the comprehensive psychoeducational evaluation. Practicum experience required as well as experience in communicating results of evaluation.

911. Individual Clinical Assessment II. 5 hours.

Prerequisite: EPY 500/700 or equivalent.

Administration and interpretation of the most commonly used psychoeducational assessment instruments including measure of cognitive ability, achievement, perceptual motor ability, adaptive behavior and social-emotional functionings. Emphasis will be on building clinical skill as well as on understanding legal and professional issues associated with the use of these assessment procedures.

912. Social-Emotional Aspects of Educational Diagnosis. 5 hours.

Prerequisite: EPY 910 and 911.

The administration, scoring and interpretation of test materials designed to diagnose social and emotional adjustment problems in school children. Emphasis is given to the effects of social and emotional adjustment on academic achievement.

913. Individual Preschool Testing. 5 hours.

Prerequisite: EPY 910 or equivalent.

Administration, scoring, and interpretation of major preschool instruments; the Bayley and McCarthy Scales, and various procedures for assessing perceptual-motor development, social-emotional development, and academic readiness. Special emphasis is placed on the educational implications of test findings.

930. Thesis. 1-15 hours.

960. Research in Educational Psychology. 1-15 hours.

Individual research. Close supervision will be maintained by a member of the faculty.

963. Critique of Educational Literature in Educational Psychology. 5 hours.

Prerequisite: ERS 401/601.

Critical interpretation and evaluation of research and theoretical writing in educational psychology.

970. Internship in Educational Psychology. 1-15 hours.

Prerequisite: Permission of department.

A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

973, 974, 975. Internship in School Psychology. 1-15 hours each.

980. Practicum in Educational Psychology. 1-15 hours.

Prerequisite: Permission of department.

Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

983, 984, 985. Practicum in School Psychology. 1-15 hours each.

EDUCATIONAL RESEARCH (ERS)

600. Special Problems in Educational Research. 1-10 hours.

Independent study with permission of department.

601. Methods of Research in Education. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: EPY 304 or equivalent. Research concepts and skills and related competencies involved in the interpretation and application of reported research.

611. Applied Descriptive Statistics. 5 hours. Four lectures and one 2-hour lab period.

Interpretations and computations in descriptive statistics with emphasis on correlation and regression with a brief introduction to probability and the normal distribution.

765. Applied Project in Educational Research. 5 hours.

Functional study of a topic or problem in education significantly related to the student's professional task.

799. Qualitative Research Methods in Education. 5 hours.

Prerequisite: One graduate course in research or permission of department.

Theories, methodologies, and findings are examined from qualitative educational research: ethnography, case study, life history, document analysis, and interview studies. The rela-

tionships between qualitative research and other investigative traditions are emphasized. Techniques for data collection, analysis, and presentation are studied through the design and implementation of a research project.

802. Planning Educational Research. 5 hours.

Prerequisite: ERS 411/611 and 812, their equivalents, or permission of department.

Designed for students who plan to engage in a research project as a part of degree requirements. Deals with research logic, research strategies, research models, and research tools.

809. Advanced Qualitative Analysis in Educational Research. 5 hours.

Prerequisite: ERS 799.

Examination of conceptual, theoretical, methodological, and empirical applications of qualitative data in educational research, e.g., observational field notes, interview transcripts, documents and other participant artifacts, and film, tape, and photograph records. Procedures for the analysis and interpretation of qualitative data are presented, practiced, and evaluated.

812. Applied Inferential Statistics. 5 hours.

Prerequisite: ERS 411/611 or equivalent.

Statistics of inference, sampling techniques, analysis of variance and covariance, introduction to principles of experimental design.

813. Research Design in Education. 5 hours.

Prerequisite: ERS 812 or equivalent.

Complex analysis of variance and covariance, introduction to factor analysis and problems encountered in the design of educational experiments.

899. Research Seminar in Research Design. 1-10 hours.

Prerequisite: ERS 813 or permission of department.

Seminar on statistical or research design topics.

916. Developing Grant Proposals. 5-10 hours. (Max. 10 hours.)

Prerequisite: ERS 401/601, 411/611, or EPY 500/700 or permission of department.

The student will develop skills in preparing a research proposal for submission to an appropriate agency or foundation for funding.

930. Thesis. 1-15 hours.

960. Educational Research in Educational Research. 1-15 hours.

Individual research. Close supervision will be maintained by a member of the faculty.

970, 971, 972. Internship in Educational Research. 5 hours each.

Prerequisite: ERS 813 or equivalent.

Three quarters of internship/practicum experiences are offered to familiarize students with use of the computer in data analysis. The focus of the experiences is on becoming acquainted with the use of SPSS, SAS, and BMDP computer program packages and interpretation of printouts. Some basic computer language skills are developed. Also, experience is given in consulting with other graduate students on data processing problems.

980. Practicum in Educational Research. 5 hours.

Prerequisite: ERS 813 or equivalent.

Two quarters of internship/practicum experiences are offered to familiarize students with use of the computer in data analysis. The focus of the experiences is on becoming acquainted with the use of SPSS, SAS, and BMDP computer program packages and interpretation of printouts. Some basic computer language skills are developed. Also, experience is given in consulting with other graduate students on data processing problems.

ELEMENTARY EDUCATION, DIVISION OF

EARLY CHILDHOOD EDUCATION (ECE)

600. Special Problems in Early Childhood Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

642. Organization of Early Childhood Classrooms. 5 hours.

Prerequisite: EPY 403, EXC 500/700 and a course in child development.

Investigation of early childhood education principles and practices which are germane to organizing and operating the classroom for learners in grades kindergarten through Grade 4. Students will acquire knowledge of important theoretical approaches in this area as well as practical skills applicable to their work with young children.

672. British Studytour on Education of Young and Handicapped Children. 5 hours.

699. Research Seminar in Early Childhood Education. 1-10 hours.

A seminar for master's level students in education dealing with proposed research projects and critiques of the literature.

700. Early Childhood Education. 5 hours.

Study of facilities, equipment, organization, and administration of curricula in early childhood education.

701. Current Trends in Early Childhood Education. 5 hours.

Interdisciplinary factors and research in the education of children ages three to eight.

705. Problems of Teaching in Early Childhood Education. 5 hours.

Prerequisite: Four courses in education.

Instructional procedures and evaluation in terms of student growth.

711. The Educational Role of Play in Early Childhood Education. 5 hours.

Prerequisite: Upper division course in child development or psychology.

An examination of the cognitive and affective aspects of the play of children in Grades 1-4. Techniques for facilitating children's play will be stressed.

746. Internship in Teaching Early Childhood Education. 1-15 hours.

Prerequisite: Permission of department.

Supervised practicum in grades K-4.

765. Applied Project in Early Childhood Education. 5 hours.

Functional study of a topic or problem in early childhood education significantly related to the student's professional task. Required of all EdS students in early childhood education.

899. Research Seminar in Early Childhood Education. 1-10 hours.

Doctoral seminars.

930. Thesis. 1-15 hours.

960. Educational Research in Early Childhood Education. 1-15 hours.

Prerequisite: Advanced graduate standing in early childhood education and permission of department.

Independent research under direction of faculty.

963. Critique of Educational Literature in Early Childhood Education. 5 hours.

Prerequisite: ERS 801.

Critical interpretation and evaluation of research and theoretical writing in early childhood education. Each student will make critical reviews of significant education literature in his specialization.

970. Internship in Early Childhood Education. 1-15 hours.

Prerequisite: Permission of department.

A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

980. Practicum in Early Childhood Education. 1-15 hours.

Prerequisite: Permission of department.

Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

ELEMENTARY EDUCATION (EEL)

600. Special Problems in Elementary Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

699. Research Seminar in Elementary Education. 1-10 hours.

A seminar dealing with proposed research projects and critiques of the literature in elementary education.

705. Problems of Teaching Elementary Education. 5 hours.

Prerequisite: Four courses in education.

Instructional procedures and evaluation in terms of student growth.

708. Curriculum Planning—Elementary. 5 hours.

Prerequisite: Four courses in education and either teaching experience or permission of department.

Problems of the curriculum of elementary and secondary schools.

709. Teaching Styles in the Elementary Classroom. 5 hours.

Prerequisite: ECE 302 or EPY 304 or an equivalent upper division level course.

This course will examine the theoretical foundation of selected teaching styles and will also concentrate on planning and developing teaching strategies which reflect these styles.

746. Internship in Teaching Elementary Education. 1-15 hours.

Supervised practicum in an elementary school.

765. Applied Project in Elementary Education. 5 hours.

Functional study of a topic or problem in elementary education significantly related to the student's professional task. Required of all EdS candidates in elementary education.

802. Developing Programs for Preparing Teachers for Elementary Schools. 5 hours.

Prerequisite: Acceptance in EdS or EdD program.

This course provides graduate students who anticipate becoming instructors in college-based and other types of professional development programs with particular knowledge and skills relative to course planning and implementation which will help them become effective instructors for preparing elementary school teachers.

811. Analyzing and Stimulating Discourse in the Elementary School. 5 hours.

Prerequisite: Graduate work in language education, speech and communications, or linguistics and permission of department.

An examination of systems for analyzing the classroom discourse of children and teachers. Techniques for facilitating discourse are stressed.

899. Research Seminar in Elementary Education. 1-10 hours.

Doctoral seminars.

930. Thesis. 1-15 hours.

960. Educational Research in Elementary Education. 1-15 hours.

Prerequisite: Four courses in education and advanced graduate standing.

963. Critique of Educational Literature in Elementary Education. 5 hours.

Prerequisite: ERS 801.

Critical interpretation and evaluation of research and theoretical writing in the field of elementary education. Each student will make critical reviews of significant education literature in his/her specialization.

970. Internship in Elementary Education. 1-15 hours.

Prerequisite: Permission of department.

A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

980. Practicum in Elementary Education. 1-15 hours.

Prerequisite: Permission of department.

Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

MIDDLE SCHOOL EDUCATION (EMS)

600. Special Problems in Middle School Education. 1-5 hours. (Max. 10 hours.)

Independent study of educational problem. Student confers with instructor who is in field.

699. Research Seminar in Middle School Education. 5 hours.

Prerequisite: Admission to EdS program in Middle School Education.

Exploration of literature and research relating to the middle school. Culminates in preparation of prospectus for the EMS 765 applied project.

703. The Middle School. 5 hours.

Prerequisite: One basic course in curriculum. Will study in depth research supporting the concept of a separate organization and program for youngsters 10 to 14 years of age, types of curricular plans for the middle school, aspects of teaching in the middle school, and the organization and staff of the middle school.

705. Problems of Teaching in the Middle School. 5 hours.

Use of problem-solving techniques to identify problems, analyze causes, and develop a repertoire of strategies for problems of middle school instructional personnel.

708. Curriculum Planning for the Middle School. 5 hours.

A study of the process of curriculum development based on the unique nature of the middle school learner and content appropriate to his physical, intellectual, and emotional development. A variety of evaluative techniques will also be examined.

709. Instructional Strategies for the Middle School. 5 hours.

Prerequisite: EMS 503/703 and admission to graduate school.

Instructional strategies to meet unique needs of early adolescents, curricular approaches as related to instructional strategies and program development, major curricular models, and research on instructional strategies for middle school.

710. Evaluation of the Middle School. 5 hours.

Prerequisite: EMS 503/703 and admission to graduate school.

Course focuses on: needs for evaluation of middle school, components of evaluation, types of appropriate evaluation techniques, procedures, and utilization of research data for improving middle schools.

746. Internship in Middle School. 1-15 hours.

Prerequisite: T-4 certification or permission of department.

Supervised professional laboratory experience in a selected middle school.

765. Applied Project in Middle School Education. 5 hours.

Prerequisite: EMS 699.

Functional study and reporting of a research problem in middle school education.

EXCEPTIONAL CHILDREN, DIVISION OF

EXCEPTIONAL CHILDREN (EXC)

Majors are offered in the following areas: Early Childhood Special Education, Emotional Disturbance, Learning Disorders, Mental Retardation, Multiple Handicapped and Severely and Profoundly Handicapped. Hospital-Homebound area of study is for certification only. For specific requirements for each major, contact the program heads.

600. Special Problems in Exceptional Children. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

699. Research Seminar in Exceptional Children. 1-10 hours.

A seminar dealing with proposed research projects and critiques of the literature in exceptional children.

700. Introduction to Exceptional Children. 5 hours.

Prerequisite: Four courses in education including EPY 304.

Nature, cause, and treatment of children's disabilities and their influence on emotional, social, educational, and vocational adjustment. Special services required for exceptional children to develop to the maximum capacities.

701. Principles of Assessment of Exceptional Children. 1-5 hours.

Prerequisite: EXC 500/700 or permission of department.

Study of standardized and informal evaluative procedures for use with exceptional children. Experience in formal and informal diagnostic techniques and in reporting.

702. Creative Arts for Handicapped Children. 5 hours.

Prerequisite: Training in the arts or education. The use of art, music, and child drama to promote the social and emotional development of mentally and emotionally handicapped children. Using developmental theory as the frame of reference, students will consider and practice developmentally appropriate techniques, materials, and activities for using the creative arts with handicapped children.

704. Nature of Mental Retardation. 5 hours.

Prerequisite: EXC 500/700.

Description to types, nature, and causes of mental retardation and implications for adjustment and education. Problems of parental adjustment, diagnosis, treatment, and educational modification.

705. Behavior Management with Exceptional Children. 5 hours.

Prerequisite: Four courses in education.

Instructional procedures and evaluation in terms of student growth.

706. Teaching the Mentally Retarded. 5 hours.

Prerequisite: Four courses in education plus EXC 500/700 and 508/708.

The study, selection and preparation of suitable curricular materials; methods used in teaching the skills which mentally retarded children need.

707. Secondary School Programming for the Mentally Retarded. 5 hours.

Prerequisite: EXC 500/700, 504/704, and 508/708.

Study will emphasize the needs of the adolescent and young adult mentally retarded: pre-occupational and occupational and related experiences, home and family living, civic responsibility, and community living. The relationship of the teacher as a counselor and the utilization of community resources will also be stressed.

708. Curriculum for the Educable Mentally Retarded. 5 hours.

Prerequisite: EXC 500/700 and 504/704.

Study of various curricular approaches to the education of the educable mentally retarded; i.e., subject matter, academic developmental occupational education. Throughout, curricular programs will be considered in reference to psychological and cultural determinants in the mentally retarded and attainments necessary for adequate function in society.

709ABCDEFJKLMNPSTU. Practicum in Special Education. 1-15 hours. (Max. 15 hours)

Prerequisite: EXC 500/700

- A. Hospital and Homebound.
- B. Educable Mentally Retarded.
- C. Screening Practicum.
- D. Learning Disabilities.
- E. Emotionally Disturbed.
- F. Adaptive Behavior Practicum.
- G. Developmental Milestones Practicum.
- J. Observation Practicum.
- K. Observation of Psychoeducational Assessment Practicum.
- M. Crippled (motor).
- N. Academic Assessment Practicum.
- P. Interdisciplinary Assessment Practicum.
- S. Trainable Mentally Retarded.
- T. Preschool Assessment Practicum.
- U. Early Childhood.

714. Education of Children with Learning Disorders. 5 hours.

Prerequisite: EXC 732 and permission of department.

Administrative provisions, curriculum adaptations, and techniques of intervention and circumvention appropriate for children with disorders in one or more of the basic neuropsychological processes involved in learning to understand and/or use spoken or written languages. Comparative analyses of current theories accompanied by application in practicum and/or internship experience.

715. Nature of Physical Limitations. 5 hours.

Prerequisite: EXC 500/700.

Nature and causes of physical disabilities. Contributions of various therapies, equipment, and services of physical therapy, occupational therapy, speech correction, and play therapy.

716. Teaching Physically Limited Children. 5 hours.

Prerequisite: Four courses in education plus EXC 715.

The study, selection, and preparation of suitable materials and modifications of methodology to meet the needs of motor handicapped children.

720. Emotionally Disturbed Children in the Classroom. 5 hours.

Prerequisite: EXC 500/700 or permission of department.

Considers the nature and characteristics of emotional and social disturbances and effects on learning and educational adjustment. Basic alterations in school programs are discussed.

721. Teaching Procedures for Disturbed Children. 5 hours.

Prerequisite: EXC 500/700 or permission of department.

Planning and implementing adaptations in the educational programs for disturbed children. Emphasizes intervention techniques and behavior management, educational diagnosis, therapeutic and remedial teaching, and the relationship process.

722. Strategies for Emotionally Disturbed Adolescents. 5 hours.

Prerequisite: EXC 500/700, 520/720.

Corequisite: EXC 509E/709E.

A study of psychoeducational methods for dealing with problems of disturbed adolescents in secondary school settings. This course emphasizes student's perceptions of school, drug and alcohol problems, affective-based activities; and working effectively with parents.

729. Curriculum and Methods in Early Childhood Special Education. 1-3 hours. (Max. 9 hours.)

Prerequisites: EPY 500/700, EXC 500/700, PSY 408, EPY 304.

An understanding of selected theories of learning and human growth and development, and use of curriculum instructional procedures and materials. Discussion and analysis of existing teaching strategies for handicapped infants and young children and for their families.

730. Advanced Curriculum and Methods for the Mentally Retarded. 5 hours.

Prerequisite: Permission of department and/or EMR/TRM certification or certifiability.

An understanding of various selected theories of learning, human growth and development, and intellectual development as they relate to the development of curriculum instructional procedures and educational assessment for the mentally retarded. Further development of skills in material, modification of existing materials, and curriculum development for achievement of specific objectives. Further development of basic instructional competencies.

732. Children with Learning Disorders. 5 hours.

Prerequisite: Permission of department.

Analysis of physical, behavioral and educational problems of children which result from central processing dysfunctions. Discussions of current theories and practices for educational diagnosis and remediation.

733. Perspectives on Secondary Programming for the Handicapped. 5 hours.

Prerequisite: EXC 500/700.

An examination of the special educator's role in the habilitation of handicapped adoles-

cents and adults. Students will investigate current efforts to guarantee employment opportunities and develop programs for handicapped adolescents in the schools and in the community.

734. Curriculum Development in Secondary Programs for the Handicapped. 5 hours.

Prerequisite: EXC 500/700, 733.

The course develops the abilities to select, modify, and develop appropriate curricula for exceptional children in secondary schools. Students will investigate several approaches to the development of prevocational curricula, practice techniques for adapting existing curricula to individual needs, and examine the quality and appropriateness of secondary curricula materials.

740. The Family and the Exceptional Child. 5 hours.

Prerequisite: Graduate standing in the College of Education, EXC 500/700; or permission of department.

A study of the interactions among exceptional children and their families. Dynamics of family interaction, parental attitudes, parental reactions to children with defects.

741. Behavior Management of Exceptional Children. 5 hours.

Application of psychological techniques of behavioral management. Emphasizes current research in behavior modification and social influence techniques as they are applied to exceptional children.

746B. Internship in Teaching the Mentally Retarded. 1-15 hours.

Prerequisite: EXC 500/700, 504/704, 506/706, 508/708.

Student teaching or similar experience.

746C. Internship in Hospital/Homebound Teaching. 1-15 hours.

Prerequisite: EXC 715 and permission of department.

746D. Internship in Teaching the Learning Disabled. 1-15 hours.

Prerequisite: EXC 732, 714.

746E. Internship in Teaching the Emotionally Disturbed. 1-15 hours.

Prerequisite: EXC 509E/709E, 520/720, 521/721, 741 or equivalent courses, plus permission of department.

Supervised experience with emotionally disturbed children or adolescents in a variety of educational settings.

746M. Internship in Teaching the Physically Limited. 1-15 hours.

Prerequisite: EXC 715, 716 (or concurrent registration).

746S. Internship in Teaching the Severely Mentally Retarded. 1-15 hours.

Prerequisite: EXC 500/700, 504/704, 508/708, 595/795.

Student teaching or similar experience.

746U. Internship in Early Childhood Special Education. 1-15 hours.

Prerequisite: EXC 709U, 729.

A quarter-long experience in an educational or clinical setting with handicapped infants and young children. Interns assume regular staff responsibilities and complete assignments in intervention program development.

750. (EAV) Instructional Media for Exceptional Learners. 5 hours.

Prerequisite: EXC 500/700 or permission of department.

Principles in the use of alternative instructional media for exceptional learners. Emphasis is placed on selection and retrieval of various media, analysis, evaluation, and adaptation of instructional media for exceptional learners.

763. Critique of Educational Literature: Exceptional Children. 5 hours.

Readings and library research around contemporary topics related to the education of exceptional children. Limited to Master's students only.

765. Applied Project in Exceptional Children. 5 hours.

Prerequisite: Permission of department.

This is a course in which students develop projects on topics particular to exceptional children.

795. Teaching the Severely Mentally Retarded. 5 hours.

796. Programming for the Moderately/Severely Retarded Adult. 5 hours.

Prerequisite: EXC 595/795.

This course is designed to equip the student with an understanding of the unique problems of the adult retardate in the community and the procedures and problems in helping this population learn skills needed for work and community living.

799U. Seminar in Program Administration and Management of Early Childhood Special Education. 3 hours.

Prerequisite: EXC 509U/709U, 729, 501/701.

Study of procedures for dealing with administrative and public relations responsibilities within program for handicapped infants and children. Includes study of governmental structure, fiscal management, staff supervision, and program control.

810. Learning Characteristics of the Mentally Retarded. 5 hours.

Prerequisite: Certification in the education of the mentally retarded and/or permission of department.

A survey of the research literature dealing with the learning characteristics of the mentally retarded, with implications for educational practice.

831. Analysis of Research in Education of Disturbed Children. 5 hours.

Prerequisite: Permission of department.

Research oriented seminar for advanced graduate students. Course will focus on the major theoretical approaches which attempt to explain child variance. Other related research will also be considered.

832. Law and Education of the Handicapped. 5 hours.

Prerequisite: EXC 500/700 or permission of department.

Attention is focused on the specific mandates of court rulings, legislative enactments, and executive regulations and their impacts on the function of general and special education in providing public education for the handicapped. Consideration is also given to the roles of individuals, groups, and agencies in their development.

837. Analyses of Research in Special Education. 5 hours.

Prerequisite: Permission of department.

Study and evaluation of research in special education. Applications to educational, psychological and vocational rehabilitation procedures.

899. Research Seminar in Exceptional Children. 1-10 hours.

Prerequisite: Limited to EdS or doctoral students.

A study of current developments in exceptional children research.

901. Problems of the Multiple Handicapped. 5 hours.

Prerequisite: EXC 504/704, 715.

Planning and implementing programs for the total education, care, and treatment of mentally retarded and physically handicapped children.

930. Thesis. 1-15 hours.

941. Administration and Supervision of Special Education. 5 hours.

Prerequisite: Permission of department.

Study of the needs of exceptional children

with particular emphasis on planning and implementing comprehensive special education programs.

960. Educational Research in Exceptional Children. 1-15 hours.

Prerequisite: Limited to EdS or doctoral students and permission of department.

An examination of the social, psychological, and physical aspects of the cause and effect of handicapping conditions.

963. Critique of Educational Literature in Exceptional Children. 5 hours.

Prerequisite: Advanced graduate standing and permission of department.

A review and critique of the literature in selected areas of special education.

970. Internship in Public Schools: Mental Retardation. 1-15 hours.

Prerequisite: Advanced graduate standing and permission of department.

A study-work program with retarded individuals; class or conference study of problems encountered by the intern with the remainder of the time in application of principles in public school or institutional settings.

973. Internship in Public Schools: Motor Handicapped. 1-15 hours.

Prerequisite: Permission of department.

A study-work program; class or conference study of problems encountered by the intern with the remainder of time in application of principles in public schools.

980. Practicum in Exceptional Children. 1-15 hours.

Prerequisite: Advanced graduate standing and permission of department.

Supervised participation in selected aspects of programming and research with exceptional children.

987. Internship in the Administration and Supervision of Special Education. 1-15 hours.

Prerequisite: Permission of department.

Supervised participation in coordinating a public school or residential school program of special education.

990. Internship in State Supervision of Special Education Programs. 1-15 hours.

Prerequisite: Permission of department.

Supervised participation in a state department of education.

993. Internship: College Teaching in Exceptional Children. 5 hours.

994. Internship: Supervision of Teachers of Exceptional Children. 1-15 hours.

SPEECH PATHOLOGY AND AUDIOLOGY (SPA)

600. Special Problems in Speech Pathology and Audiology. 1-10 hours.

Adaptation of the speech pathology and audiology curriculum to the individual needs of mature students. A detailed outline of requirements must be prepared in conference by the student and instructor and approved by the head of speech pathology and audiology.

614S. (LIN) Speech and Hearing Science. 5 hours.

The physical properties of sound; basic psychoacoustics; the human speech mechanism as a sound source and resonator; acoustic properties of vowels and consonants; sound spectrum relationships of vocal pitch, loudness, and voice quality; basic instrumentation.

650. (PSY/LIN) Language Development. 5 hours.

Prerequisite: EPY 304 or equivalent and CFD/PSY 408/608.

A study of the various aspects of language development. Provides a foundation in topics such as the following: processes of reception, integration, and expression of symbolic information; the nature and effects on personal development and behavior of linguistic symbolism. Students would learn basic norms for language development as a basis for diagnosis.

651. Speech and Language Problems in the Classroom. 5 hours.

A consideration of speech and language problems on the basis of classroom involvement. Basic information in speech and language development and interfering factors.

670. Diagnosis in Speech and Language Pathology. 5 hours.

The theory, administration, and interpretation of tests and diagnostic procedures used in determining the nature, etiology of and therapy for speech, attention is given to non-audiometric evaluation of hearing; examination of speech mechanism, special abilities related to speech, and to an understanding of how results of psychological tests are related to speech problems.

671. Introduction to Audiology. 5 hours.

Prerequisite: SPA 413.

The anatomy and basic psychophysics of hearing, the pathologies causing hearing loss, and basic theory of hearing evaluations. A survey of educational, psychological and medical rehabilitation for persons with a loss. Practice in pure tone audiometry.

673. Psycho Social Aspects of Deafness. 5 hours.

Prerequisite: SPA 471/671.

A study of the development, adjustment and educational needs of the deaf including mental development, personality development, emotional adjustment and social maturity; the aptitudes, special abilities and associated handicaps of the deaf.

677. Clinical Audiology I. 3 hours.

Prerequisite: SPA 310, 413, 471/671.

Rationale and procedure for measuring aspects of hearing, including simple and complex stimuli, threshold and supra-threshold measurements and pure tone speech audiometric measures.

678. Clinical Audiology II. 3 hours.

Prerequisite: SPA 310, 413, 471/671, 477/677.

The study of the rationale and procedures of advanced tests used for differentiating between types of auditory disorders.

679. Hearing Aids and Amplification Systems. 3 hours.

Prerequisite: SPA 413, 471/671.

A study of hearing aids and amplification systems including history, design, electro and psycho-acoustic characteristics as well as the theory of hearing aid evaluation, selection and ear molds.

681. Basic Manual Communication. 5 hours.

History and description of manual communication systems. Practice in the expressive and receptive use of fingerspelling and sign language.

690. Pediatric Audiology. 3 hours.

Prerequisite: SPA 413.

This course will focus on a study of the normal development of the auditory mechanism and the causes of hearing loss in children. The evaluation process including identification audiometry, the effects of hearing loss on speech and language development, and the remediation process will also be presented.

701, 702, 703. Clinical Practice in Speech Pathology. 2 hours each.

Supervised clinical practice in speech pathology including functional and organic disorders. Speech problems provided for observations and clinical practice include articulation, voice, delayed speech, stuttering and aphasia. In addition, speech problems associated with cleft palate, cerebral palsy and hearing loss are included in the therapy program. As the student progresses in the program, the level of case severity and responsibility will increase.

704. Clinical Practice in Speech Pathology. 1-10 hours.

Supervised clinical practice in speech pathology including functional and organic disorders. Speech problems provided for observations and clinical practice include articulation, voice, delayed speech, stuttering and aphasia. In addition, speech problems associated with cleft palate, cerebral palsy and hearing loss are included in the therapy program. As the student progresses in the program the level of case severity and responsibility will increase.

711, 712, 713. Clinical Practice in Audiology. 2 hours each.

Clinical and field experience in audiology including neonatal testing, pediatric audiology, public school screening, work with the pre-school deaf, auditory training and speech reading, noise measurements and hearing conservations, and geriatric audiology.

714. Clinical Practice in Audiology. 1-10 hours.

Clinical and field experience in audiology including neo-natal testing, pediatric audiology, public school screening, work with the pre-school deaf, auditory training and speech reading, noise measurements and hearing conservations, and geriatric audiology.

734. Language Therapy for Children. 5 hours.

Prerequisite: SPA 450/650.

A developmentally based consideration of the establishment of basic, sequential, receptive and expressive language functioning in the delayed child.

738. Program Administration in Speech Pathology. 5 hours.

Methods for finding, selecting, and scheduling speech cases in the public schools, clinics, etc. The organizational and administrative problems in keeping records, reporting, and coordinating speech pathology activities. Discussion of professional responsibilities, relationships with other professional persons, and current trends in the profession.

739. Graduate Practicum in Language and Speech Pathology. 5 hours.

Prerequisite: Six courses in speech correction and 200 clock hours of supervised clinical practices.

A course to give the advanced student an opportunity to work with complex and difficult problems of language and speech, combined with intensive reading, conferences, and discussions regarding therapy for the specific types involved in the clinical practice.

746A. Internship in Speech Pathology. 1-15 hours.

Intensive supervision of speech pathology procedures in either public schools, hospitals, community and other types of centers, or a combination of these settings.

746B. Internship in Audiology. 1-15 hours.

Intensive supervision of audiological procedures in either public schools, hospitals, community clinics, centers, or a combination of these settings.

765. Applied Project in Speech Pathology and Audiology. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in speech pathology/audiology significantly related to the student's professional task.

775. Directed Individual Study in Speech Pathology. 5 hours.

Prerequisite: Four courses in speech pathology. Adaptation of the speech pathology curriculum to the individual needs of mature students. A detailed outline of requirements must be prepared in conference by the student and instructor and approved by the head of speech pathology and audiology.

776. Directed Individual Study in Speech Pathology. 5 hours.

Prerequisite: Four courses in speech pathology. Continuation of SPA 575/775, but content must be different.

778. Speech Reading and Auditory Training. 3 hours.

Prerequisite: SPA 471/671.

Processes and problems of oral communication by the hearing handicapped; procedures for improving communication by means of speech reading and auditory training.

779. Auditory Rehabilitation. 5 hours.

Prerequisite: SPA 413, 471/671, 778.

A study of the theories and procedures used in the rehabilitation of both the deaf and hard of hearing. Both the historical development and current trends in education of the hearing impaired will be reviewed.

781. Hearing Conservation. 5 hours.

Prerequisite: SPA 310, 413, 471/671.

A study of the methods used for the detection of pathological noise and the correction of its effects on the human hearing mechanisms in the community, industry, and the military.

782. Teaching Language to the Hearing Impaired. 5 hours.

A study of the practices and procedures in teaching language to the hearing impaired,

with a review of the historical philosophies and methods, and a review of the current literature.

783. Teaching Speech to the Hearing Impaired. 5 hours.

Theory, principles and procedures of teaching speech to the hearing impaired.

784. Curriculum for the Hearing Impaired. 5 hours.

A study of the planning and presentation of curriculum to the preschool and elementary hearing impaired including a review of the program available and techniques in the modification of published programs and book series.

800. Measurement, Psychophysical Methods and Signal Detection. 3 hours.

Prerequisite: STA 421/621 or 200 and SPA 471/671.

This course examines the basic concepts of measurement theory as a prerequisite to the study of the application of classical psychophysics and signal detection theory in auditory research.

801. Seminar in Speech Pathology. 5 hours.

Prerequisite: Six courses in speech correction or four courses and permission of department. Intensive exploration of the research and theory in one or more areas of speech pathology. Specific content adapted to the needs of the students. Group projects in addition to readings and lectures.

802. Seminar in Audiology. 5 hours.

Prerequisite: SPA 471/671, 477/677, 778, 579/779.

Study of recent developments and research in audiology.

803CG. Research Seminar in Speech Pathology. 1 hour each.

Intensive study of research in a specific area of speech pathology.

804B. Research Seminar in Audiology. 1 hour.

Intensive study of research in a specific area of audiology.

836. (LIN) Advanced Speech and Hearing Science. 5 hours.

Prerequisite: SPA/LIN 414S/614S.

Laboratory experience in the instrumental analysis of speech.

872. Organic Disorders of Speech: Cleft Palate. 3 hours.

Prerequisite: Six courses in speech pathology and audiology.

A detailed study of the cleft palate and its effect on speech; means for assessing speech

adequacy and potential for improvement; and role of the speech pathologist in the rehabilitation of cleft palate individuals.

875. Neuropathologies of Speech and Language. 5 hours.

Neurological correlates of speech and language, pathologies affecting neural mechanisms including aphasia, dysarthria, apraxia and agnosia in children and adults, clinical evaluation and treatment.

876. Organic Disorders of Speech: Laryngectomy. 3 hours.

Prerequisite: SPA 474 and 475 or for majors only—advanced graduate standing in speech pathology.

Assessment of speech potential of the post-laryngectomy person; speech rehabilitation techniques including esophageal voice training and use of the electrolarynx.

899. Research Seminar in Speech Pathology and Audiology. 1-10 hours.

Each doctoral candidate is expected to attend a seminar during each quarter of residence. A minimum of three quarter hours of credit is required. Work may be done individually or in a small group depending on the number of students enrolled each quarter.

930. Thesis. 1-15 hours.

960. Educational Research in Speech Pathology and Audiology. 1-15 hours.

Prerequisite: ERS 401/601, 411/611 and 812 or equivalent.

Individually directed research for the advanced graduate student. Emphasis is placed on the preparation of a paper of publishable quality.

970. Internship in Public Schools: Speech Pathology and Audiology. 1-15 hours.

Prerequisite: SPA 746A, 746B or one year post master's degree work experience.

Advanced internship in public schools with emphasis on problems in administration and supervision.

973. Internship in Institutions: Speech Pathology and Audiology. 1-15 hours.

Prerequisite: SPA 746A, 746B or one year post master's degree work experience.

Clinical practicum for advanced students in an institution such as a mental retardation center, mental health agency, or a residential treatment center for the speech and hearing impaired.

976. Internship in Clinical Centers: Speech Pathology and Audiology. 1-15 hours.

Prerequisite: SPA 746A, 746B or one year post master's degree work experiences.

Clinical practicum for advanced students in a clinical setting such as a community speech and hearing center, home health care service, or hospital.

HEALTH, PHYSICAL EDUCATION, RECREATION, AND DANCE, DIVISION OF

Within the Division, graduate study is offered in the following areas: health education (MEd), physical education (MEd, EdS, EdD, PhD), recreation and leisure studies (MEd, EdS, EdD), and safety education (MEd, EdS). Students may pursue a master's degree with a thesis option through the Master of Arts in Education degree.

HEALTH EDUCATION (HED)

600. Special Problems in Health Education. 1-10 hours.

Prerequisite: Permission of department.
Independent study in health education.

604. Introduction to the Study of Disease. 5 hours.

The systematic study of the etiology of various health problems with focus on using this knowledge for planning preventive programs. The principles, uses, techniques, and language of epidemiology and epidemiological method are presented. Students will learn and use principles of data collection, tabulation, analysis and presentation.

642. Health in Early Childhood Education. 1-5 hours.

Course especially designed for graduate majors in early childhood education.

705. Problems of Teaching Health Education. 5 hours.

Prerequisite: Four courses in education.
Instructional and evaluation procedures in health education. Review and analysis of contemporary methodologies and resources.

706. Teacher Preparation in Human Sexuality. 5 hours.

Theory and practice of family life and sex education, basic issues, philosophy and guiding principles; legal implications; needs, justification and objectives; curriculum critique; content knowledge; resource materials; acceptable methods of approach to controversial topics; microteaching and video tape evaluation stressing responsible classroom techniques appropriate for teaching human sexuality at various levels, grades 1-12.

708. Curriculum Planning in Health & Safety. 5 hours.

Prerequisite: Four courses in education and either teaching experience or permission of department.

Procedures for planning and implementing a comprehensive health and safety curriculum. Includes the schedule and sequence of health education, and issues and trends in health and safety curriculum development.

711. Organization and Administration of School Health Programs. 5 hours.

The organization and administration of the total school health program is presented. Suggestions of a practical nature are presented which will enable administrators, faculty and staff to provide a quality school health program.

712. Foundations of Health Education. 5 hours.

History, philosophy and principles directed to a working philosophy and the processes of health education. Emphasis on both school and public health education.

713. Community Health Organization. 5 hours.

A study of the health organizations and other significant groups and persons within a community. Emphasis is on the development of knowledge and skills which enable the community health professional to plan, develop, facilitate, and implement cost-effective programs in various settings and for a wide range of people or groups.

715. (PED, REC, SED) Research Methods in Health, Physical Education and Recreation. 5 hours.

See PED 715.

716. Current Issues in Health and Safety. 5 hours.

Drug abuse, smoking, delinquency, suicide, and others. Emphasis on the etiology of health problems and the role of parents, teachers, administrators, and the community in meeting and preventing health problems.

721. The Effects of Drug Use and Abuse. 5-10 hours.

Social, moral, psychological, and physiological causes and effects of drug use and abuse. Individual, family and community factors related to prevention and treatment.

722. Health Care Delivery Systems. 5 hours.

Prerequisite: HED 370 or equivalent.

An in-depth study of the structure, role, and function of existing components of our health care delivery system, and an analysis of future trends of health care delivery systems.

723. Patient Education. 3 hours.

Prerequisite: HED 171 or 370.

An in-depth study of comprehensive patient

education programs. Emphasis on patient education program development, implementation and evaluation as related to the patient management of illness, and preventive health care.

746. Internship in Teaching Health Education. 1-15 hours.

Prerequisite: Permission of department.

In-school experience for the graduate student who is completing initial teacher certification requirements in health education.

765. Applied Project in Health Education. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in health education that is related to the student's professional job description.

930. Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

PHYSICAL EDUCATION (PED)

600. Special Problems in Physical Education. 1-10 hours.

Prerequisite: Permission of department.

Independent study in physical education.

642. Movement Education for the Young Child. 1-5 hours.

Designed to introduce the teacher to the skills and activities of movement education for children in nursery and pre-school. The student will also practice and study the effective approaches to teaching movement skills to children in these age groups.

661. Adapted Physical Education. 5 hours.

Emphasis on developing an understanding of those parameters encompassing theory and practice in physical education for special populations.

704. Instructional Strategies in Physical Education. 5 hours.

Prerequisite: PED 546/746 or equivalent.

This course is designed as an advanced course in physical education instruction. A variety of instructional strategies will be presented for the purpose of improving teaching effectiveness in physical education. The course is designed to increase the student's repertoire of teaching skills.

705. Problems of Teaching in Physical Education. 1-5 hours.

Prerequisite: Four courses in education.

Instructional procedures and evaluation in terms of student growth.

707. Movement Education for the Elementary School. 5 hours.

Prerequisite: PED 307, 442/642 or equivalent. The course is designed to provide the graduate student with an understanding of the definition, conceptual framework and theoretical understanding of movement education. Students will operationalize their understanding by participating in simulated and/or actual teaching experiences, in the analysis of teaching experiences, and in planning a movement education program for the schools.

708. Curriculum Planning in Physical Education. 5 hours.

Prerequisite: Completion of a teacher certification program in physical education and teaching experience or permission of department.

Problems of curriculum design and development in physical education.

710. Motor Development. 5 hours.

Prerequisite: Undergraduate degree in physical education, child growth and development, or early childhood education.

The course addresses development of fundamental motor skills from childhood to old age with emphasis on concomitant physiological and motor skill stages of development. The impact of developmental delays on motor skill acquisition will also be covered.

712. Analysis of Teaching Physical Education. 5 hours.

Prerequisite: PED 708 or equivalent.

After developing a brief overview of current research related to specific teaching models, students will become involved in the process of utilizing descriptive-analytic techniques created specifically for use in the analysis of teaching physical education. Emphasis will be placed on systematic observation in physical education teaching as it is currently employed in supervision, research and in self-evaluation of teaching.

713. Administration of Physical Education in the School Program. 5 hours.

Program planning; budgeting; selection, care and maintenance of equipment and facilities; personnel; and other administrative problems; evaluation of physical education in the school program.

714. Current Problems in Health and Physical Education. 1-5 hours.

Problems met in a comprehensive program of health and physical education in the school and community. Special emphasis given to problems in areas of students' interests.

715. (HED, REC, SED) Research Methods in Health, Physical Education and Recreation. 5 hours.

The application of research methods to health, physical education and recreation with experience in developing techniques of gathering, analyzing, and reporting data.

716. Advanced Measurements in Physical Education. 5 hours.

Prerequisite: PED 383 or equivalent.

Current tests in physical education; the principles of test construction relative to skills, knowledge, and behavior tests; tools for evaluation of tests; and the use of laboratory instruments in performance measurement.

717. History of Physical Education. 5 hours.

Prerequisite: PED 372 or equivalent.

Greek and Roman concepts of physical education, education and physical education in the Renaissance and Reformation, historic events of European and American physical education and comparative programs of physical education.

721. Motor Learning in Physical Education. 5 hours.

Analysis and application of psychological factors and theories of learning with special reference to learning and retention of motor skills.

722. Sport and Society. 5 hours.

An analysis of sport in American culture.

723. History of Sport in America. 5 hours.

Prerequisite: 20 hours of physical education and/or history or permission of department.

Traces the development of sport from the colonial period to the present. Deals with recreation sport, school sport, amateur and professional athletics. Investigates the social, economic, and political impact of sport.

724. Psychosocial Aspects of Sport. 5 hours.

Prerequisite: Undergraduate emphasis in physical education or a related field or permission of department.

The study of the psychological and sociological processes that affect the individual as an active participant in sport and physical activity.

730. Physiology of Exercise and Physical Performance. 5 hours.

Prerequisite: PED 463 or equivalent.

Neuromuscular, metabolic and cardiovascular-respiratory responses to exercise and adaptations to training, with emphasis on applications to human physical performance and fitness.

731. Adult Fitness and Cardiac Rehabilitation. 5 hours.

Prerequisite: PED 463.

The course provides knowledge and skills required for conducting and administering adult fitness, industrial fitness, and cardiac rehabilitation programs. Practical experience is obtained working with an adult fitness program and assisting with physical fitness assessment, exercise stress testing and exercise prescription.

732. Physical Activity for Older Adults. 5 hours.

Prerequisite: PED 731 or GNT 400/600.

The course focuses on the physical, social, and psychological effects of aging in relation to physical activity and exercise. The course provides knowledge, skills and practical experience in conducting activity programs for older adults.

735. Biomechanics of Motor Skills. 5 hours.

Prerequisite: PED 360, 715 or equivalent.

Description and analysis of performance of motor skills based on laws and principles of mechanics.

746. Internship in Teaching Physical Education. 1-15 hours.

Prerequisite: Permission of department.

A study-work program which includes on the job experiences in a teaching setting coupled with class or conference study of problems encountered by the intern.

762. Physical Education for the Mentally Retarded. 5 hours.

Prerequisite: PED 661 or equivalent.

Development of teacher competencies in adapting physical activity to the needs of mentally retarded within the organizational framework of the school including psychomotor and program evaluation, motor skill acquisition, integration of movement with other subjects and related research.

765. Applied Project in Physical Education. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in physical education significantly related to the student's professional task.

780. Practicum in Physical Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Supervised participation in selected aspects of programming and research in physical education.

830. Advanced Topics in Exercise Physiology. 5 hours.

Prerequisite: PED 730.

Advanced study through reading, discussion and laboratory investigation of special topics in exercise physiology.

863. Programming in Adapted Physical Education. 5 hours.

Prerequisite: PED 661.

Theories, concepts and techniques for development, implementation, coordination, and evaluation of adapted physical education programs including policies, public relations, inter-agency communication, funding, administrative and programs structure, personnel, in-service training and facilities.

899. Research Seminar in Physical Education. 1-10 hours.

A required seminar for first year doctoral students beginning fall quarter and continuing the following winter and spring quarters.

901. Foundations in Health and Physical Education. 5 hours.

Prerequisite: PED 372, 713 or equivalent.

A systematic review of the philosophical foundations of physical education.

908. Curriculum Inquiry in Physical Education. 5 hours.

Prerequisite: PED 708 and ESC 702 or 804.

Analysis of the process of curriculum theorizing. Participation in the development of physical education curriculum theory. Application of criteria for theory-building to model-building in physical education. Translating physical education curriculum theory into practice.

916. Case Studies in Physical Education and Athletics. 5 hours.

Prerequisite: Undergraduate major in physical education or permission of department.

Problems dealing with the administration and teaching of physical education and athletics are studied by using the case method.

917. Principles of Measuring Motor Performance. 5 hours.

Prerequisite: PED 716 and ERS 812 or equivalent.

An in-depth treatment of reliability and validity techniques applicable to motor performance data; measurement theory and problems related to motor performance data; applications of advanced statistical techniques to measurement situations in physical education.

921. Advanced Study of Motor Skill Acquisition. 5 hours.

Prerequisite: PED 721.

Advanced study in motor learning with appropriate laboratory experiences.

930. Thesis. 1-15 hours.

960. Educational Research in Physical Education. 1-15 hours.

An independent study of a research topic in physical education appropriate to the advanced graduate student's specialization.

963. Critique of Educational Literature in Physical Education. 5 hours.

Critical evaluation of reported research in the advanced graduate student's specialization area within physical education.

970. Internship in Physical Education. 5 hours.

Prerequisite: Permission of department.

A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

RECREATION AND LEISURE STUDIES (REC)

600. Special Problems in Recreation. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

699. Research Seminar in Recreation and Leisure Studies. 1-10 hours.

A seminar dealing with proposed research projects and critiques of the literature in recreation.

712. Problems in School and Community Recreation. 5 hours.

Problems of school and community recreation pertaining to philosophy, program, facilities and leadership. This course will consider the school camp program.

715. (PED, HED, SED) Research Methods in Health, Physical Education and Recreation. 5 hours.

See PED 715.

729. Program Planning and Evaluation in Therapeutic Recreation. 5 hours.

An in-depth study and application of approaches to therapeutic recreation program development, design, and evaluation in relation to persons with impairments, disability or

social problems in various settings. Case studies will be used and field trips and voluntary service required. Credit for both REC 405 and REC 729 could not be received.

730. Camping Administration. 5 hours.

Prerequisite: REC 386 or equivalent experience.

Study of organization and administration of camps with particular emphasis on program planning, selection and training of staff, composite selection and development, health and safety, evaluation and special problems. Individual study of camp programs for the ill and handicapped.

731. Outdoor Recreation. 5 hours.

The organization and administration of outdoor recreation in local, county, and federal agencies with emphasis on objectives, philosophy, problems, trends, and methods of operation.

733. Leisure Counseling. 5 hours.

Prerequisite: ECP 888 and permission of department.

Examines the concepts of leisure counseling and leisure education models as applied to helping individuals deal effectively with the problems associated in the use of leisure time. Special attention given to the leisure problem of the disabled and handicapped.

734. Administration of Recreation and Leisure Services. 5 hours.

Prerequisite: REC 699 or permission of department.

Study of methods of organization and administration of recreation at the local level. Course involves investigation of techniques in budgeting and finance, personal management, public relations, departmental organization and administrative practices, and legislative provision.

735. Park Management. 5 hours.

Prerequisite: REC 699.

An introduction to the management, operation, and development of public parks and open spaces.

737. Recreation for the Mentally Retarded. 5 hours.

Prerequisite: REC 536/736 or EXC 505/705.

The use of recreational activities and their therapeutic value for the mentally retarded.

738. Recreation and Aging. 5 hours.

Prerequisite: REC 512/712 and SOC 455/655.

Recreation program services for the aging and aged in both community and institutional settings.

739. Recreation for the Mentally Ill. 5 hours.
Prerequisites: REC 729 or PSY 423 or permission of department.

In-depth study and analysis of recreative experiences and the provisions of recreation service in the care, treatment, and rehabilitation of the mentally ill and emotionally disturbed. Consideration also given to recreation experiences in prevention of illness. Experience in a mental health treatment setting will be required.

746. Internship in Teaching Recreation and Leisure Studies. 1-15 hours.

Prerequisite: Permission of department.

Recreation majors are placed in selected recreation centers for an entire quarter, during which time they are supervised in directing recreation activities.

765. Applied Project in Recreation. 5 hours.
Functional study of a topic or problem in recreation significantly related to the student's professional task.

899. Research Seminar in Recreation and Leisure Studies. 1-10 hours.

Each doctoral candidate is expected to attend a seminar during each quarter of residence. A minimum of three quarter hours of credit is required.

930. Thesis. 1-15 hours.

933. Trends in Recreation. 5 hours.

A critical analysis of the role of recreation in modern society with attention given to the current status and implications for future trends.

960. Educational Research in Recreation. 1-15 hours.

An independent study of a research topic in recreation appropriate to the advanced graduate student's specialization.

963. Critique of Educational Literature in Recreation. 5 hours.

Critical interpretation and evaluation of research and theoretical writing in the field of recreation. Each student will make critical reviews of significant education literature in this specialization.

980. Practicum in Recreation. 1-15 hours.

Prerequisite: Permission of department.

Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

SAFETY EDUCATION (SED)

600. Special Problems in Safety Education. 1-10 hours.

Prerequisite: Permission of department.

Independent study in safety education.

645. Industrial Safety. 5 hours.

Introduction to the specific areas and the broad scope in methods, materials, and problems in Industrial Safety programming with special emphasis on organization and implementation of accident prevention and control techniques.

715. (PED, HED, REC) Research Methods in Health, Physical Education and Recreation. 5 hours.

See PED 715.

744. Safety in Sports and Recreation. 5 hours.

Philosophy of sports safety: human and environmental factors and their interrelationships in sports injury and its control; risk-taking and decision solution strategies; application of accident prevention and injury control to selected sports; contributions of sports medicine to safety.

746. Internship in Teaching Health and Safety. 1-15 hours.

Prerequisite: Permission of department.

In-school experience for the graduate student who is completing initial teacher certification requirements.

765. Applied Project in Safety Education. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in safety education that is related to the student's professional job description.

775. Foundations of Safety Education. 5 hours.

An introduction to the social significance of the accident problem and the nature of the accident prevention program.

776. Principles of Traffic Safety. 5 hours.

Prerequisite: SED 575/775 or permission of department.

An analysis of traffic accidents and traffic safety practices with psychological testing and use of simulation in the development of knowledge concerning the overall driving situation.

777. Practices in Driver Education. 5 hours.

Prerequisite: SED 576/776 or permission of department.

The teaching of driving with dual-control automobiles, development of approved driving

attitudes and habits, and the administration of high school programs of driver education.

791. Administration of School Transportation and Safety Education. 5 hours.

Concentrated study of requirements of local, state and federal regulations pertaining to school transportation and safety, driver and traffic programs as they affect administrators, directors and supervisors.

792. Behavioral Factors in Health and Safety Education. 5 hours.

Concentrated study of behavioral factors related to health and safety. Special emphasis on effect of attitudes, motivations and adjustments. Investigation of principles and methods of identifying, understanding, and modifying unsatisfactory attitudes and behavior. Review of current relevant research.

930. Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

HIGHER EDUCATION (EHI)

765. Applied Project in Higher Education. 5 hours.

A functional study of a topic or problem in higher education significantly related to the student's professional task is pursued.

800. The Development and Scope of Higher Education. 5 hours.

A broad survey of higher education emphasizing recent developments in American higher education.

802. The Two-Year College. 5 hours.

Purposes, policies, and programs of two-year colleges are explored. Opportunity provided for individual and group projects.

820. Institutional Research. 5 hours.

This course is designed to develop competency and skills in the specialized area of data collection and interpretation of institutional studies and their implication in higher education.

830. The Law and Higher Education. 5 hours.

A study of the legal aspects of higher education through pertinent court decisions affecting the administration of the institution, faculty, staff, and students.

840. Financial Aspects of Higher Education. 5 hours.

A study of the financial aspects of higher education: need for current and capital funds, sources of funds, financial policies, economies in institutional operations, college and university development, budgeting, and resource allocation.

889A-G,JKM. Seminar in Higher Education. 1 hour each.

Graduate seminar on topics of general and special interest in higher education.

899. Research Seminar in Higher Education. 1-10 hours.

This course deals with proposed student research projects and methods of data analysis.

900. Organization and Governance in Higher Education. 5 hours.

Administrative theory, diversity of types of policies, control and organizational patterns of public and private institutions, and an investigation of current literature and practices and their implications for higher education.

901. Programs and Instructional Processes in Higher Education. 5 hours.

A study of curriculum development in colleges and universities; general education and specialization; resources for instruction; instructional processes; course planning.

902. Critical Issues and Concepts of Change in Higher Education. 5 hours.

A study of critical problems and issues facing higher educational institutions today, emphasizing the processes of change which may result in improved administrative leadership and practice.

930. Thesis. 1-15 hours.

963. Critique of Educational Literature in Higher Education. 5 hours.

Critical interpretation and evaluation of research and theoretical writing. Each student will make critical reviews of significant literature in his/her field of specialization.

970. Internship in Higher Education. 5-15 hours.

Prerequisite: Other required coursework.

A study-work program. Conference study of problems encountered by the intern with a major portion of time spent in application of principles to an internship program at a selected institution.

LANGUAGE EDUCATION

ENGLISH EDUCATION (EEN)

600. Special Problems in English Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the col-

lection and analysis of original data pertinent to a given problem.

642. Language Arts for Teachers of Early Childhood Education. 1-5 hours.

This course includes research and theory on language acquisition, development and variation and the implementation for classroom practices. Instructional techniques in oral language activities and activities basic to experiences in written language are explored.

699. Research Seminar in English Education. 1-10 hours.

A seminar dealing with proposed research projects and critiques of the literature in English education.

700. (LIN) Language Acquisition and Development. 5 hours.

A language oriented study of the stages a child goes through in acquiring native language and the processes used in developing sophistication. Infant, childhood, and adolescent periods shown as a continuum in the native's linguistic development.

704. Language Arts for the Elementary Teacher. 5 hours.

Instructional procedures, materials, and evaluation in teaching English; including oral and written composition, spelling, handwriting, and grammar in the elementary school.

705. Problems of Teaching English Education. 5 hours.

Effective teaching and classroom management techniques.

706. Literature Study in Secondary Schools. 5 hours.

A study of literature and teaching methods appropriate for an effective secondary school literature program.

707. (LIN) English Language Studies for Teachers. 5 hours.

Instructional applications of language concepts drawn from theories of grammar, semantics, dialectology, lexicography, and the history of English.

708. Curriculum Planning in English Education. 5 hours.

Prerequisite: 25 quarter hours of graduate credit and teaching experience or permission of department.

Historical, philosophical, and sociological bases for curriculum planning in English; survey of current trends in design and content.

709. Composition in the Elementary and Secondary School. 5 hours.

Instruction in the modes of written expression and study of composition teaching methods.

711. (ELE) Children's Literature in the Elementary School. 5 hours.

A survey of literature appropriate for children, preschool through junior high school. (Open only to students who have had no previous course in children's literature.)

712. (ELE) Guiding the Reading of Children. 5 hours.

See ELE 712.

713. (ELE) Folk Literature in the Curriculum. 5 hours.

Prerequisite: EEN 300 or 511/711.

A study of the genres of folk literature, their relationship to formal literature, and their role in contemporary society. A study of field work techniques and of oral narrative style. Development of approaches for incorporating folk literature into the school curriculum.

715. The Oral Tradition in Prose and Poetry. 5 hours.

Prerequisite: EEN 300 or 516 or 511/711.

This course includes a study of the role of the storyteller in preliterate and literate cultures; it also provides practice in the arts of poetic recitation, choral reading and storytelling as they relate to the primary and middle school grades.

746. Internship in Teaching English. 1-15 hours.

Prerequisite: Ten quarter hours in curriculum and methods.

Classroom teaching experience under the direction of a supervising teacher and a University faculty member.

765. Applied Project in English Education. 5 hours.

Prerequisite: 40 quarter hours of graduate credit.

Intensive study of a selected topic through library research and/or collection of original data.

805. Non-Fiction Trade Books in the Curriculum. 5 hours.

Prerequisite: EEN 300, 511/711 or 712.

Familiarization with and the use of non-fiction trade books in support of various subject-matter areas (K-8).

806. Seminar in Secondary School Literature Study. 5 hours.

Prerequisite: EEN 506/706 or EEN/ELE 712 or permission of department.

A study of recent trends in literature for adolescents; critical approaches to literature, especially response-to-literature theory and research; recent research in the teaching of literature; and issues and problems in censorship.

809. Seminar on Research in Composing Processes. 5 hours.

Prerequisite: EEN 509/709 or permission of department.

A study of the research literature on composing processes. Topics include developmental rhetoric, speaking and writing relationships, thought processes involved in composing, qualitative research methodology, and implication of research for curriculum and instruction in writing.

812. History of Children's Literature. 5 hours.

Prerequisite: EEN 712.

A study of the origins of the field of literature for children and the influences which have shaped its development until present time.

813. Seminar on the Images of Women and Minorities in Children's Literature. 5 hours.

Prerequisite: EEN/ELE 711 or EEN/ELE 712 or EEN 506/706 or an equivalent course.

This course explores the historical evolution of the image of women and racial minorities in children's literature. Research suggesting that children's literature provides historical evidence about changing social values and ideals provides the course's theoretical framework. The relationship between children's literature's socializing function and aesthetic concerns is also considered.

899. Research Seminar in English Education. 1-10 hours.

Prerequisite: Advanced graduate standing. Critiques of published research and reports of original research conducted by faculty members and doctoral students.

930. Thesis. 1-15 hours.

960. Educational Research in English Education. 1-15 hours.

Prerequisite: Advanced graduate standing. Directed readings in research related to the teaching of English.

963. Critique of Educational Literature in English Education. 5 hours.

Prerequisite: Advanced graduate standing. Critical survey of research related to the teaching of English.

970. Internship in English Education. 5 hours.

Prerequisite: Advanced graduate standing. Supervised practicum in teaching, supervision, curriculum development, etc.

FOREIGN LANGUAGE EDUCATION (EFL)

600. Special Problems in Foreign Language Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

699. Research Seminar in Foreign Language Education. 1-10 hours.

A seminar dealing with proposed research projects and critiques of the literature in foreign language education.

701. Methods and Materials for Teaching English as a Second Language. 5 hours.

Prerequisite: Permission of department. Objectives and approaches to teaching English as a Second Language; instructional materials and professional resources; principles of testing and interpreting student proficiency and progress; principles of evaluating materials, student methods, and curricula.

702. Theory and Practice for Teaching English as a Second Language. 5 hours.

Prerequisite: EFL 501/701 or permission of department.

Strategies for teaching advanced reading and writing skills; approaches to the teaching of patterns of American culture; curricular implications for English as a Second Language; observation and teaching practicum.

705. Teaching for Cross Cultural Understanding. 5 hours.

Lecture and discussion in areas of cross-cultural analysis, attitudes toward other cultures, strategies for teaching culture in the language classroom and the testing of cultural insights.

708. Curriculum Planning in Foreign Language Education. 5 hours.

Prerequisite: 25 quarter hours of graduate credit and teaching experience or permission of department.

Historical, philosophical, and sociological bases for curriculum planning in foreign languages; survey of current trends in design and content.

710. American Language and Cultural Studies for Foreign Students. 1-5 hours.

Designed to help foreign students develop advanced English skills in understanding academic lectures, comprehending reading material, speaking with grammatical accuracy and acceptable pronunciation, and writing for academic purposes.

746. Internship in Teaching Foreign Languages. 1-15 hours.

Prerequisite: Ten quarter hours in curriculum and methods.

Classroom teaching experience under the direction of a supervising teacher and a University faculty member.

765. Applied Project in Foreign Language Education. 5 hours.

Prerequisite: 40 quarter hours of graduate credit.

Intensive study of a selected topic through library research and/or collection of original data.

781. Problems of Teaching Foreign Languages. 5 hours.

Prerequisite: FR or SP 210-211 or 15 hours of education in addition to FR or SP 104.

History of method, psychology of language, learning, values, objectives, teacher's library, technique of oral work, pedagogy of phonetics applied to grammar, pedagogy of vocabulary and reading. Visual aids and realia, individual differences, tests, and measurements. Evaluation of texts, course content.

899. Research Seminar in Foreign Language Education. 1-10 hours.

Prerequisite: Advanced graduate standing. Critiques of published research and reports of original research conducted by faculty members and doctoral students.

930. Thesis. 1-15 hours.

960. Educational Research in Foreign Language Education. 1-15 hours.

Prerequisite: Advanced graduate standing. Directed readings in research related to the teaching of foreign languages.

963. Critique of Educational Literature in Foreign Language Education. 5 hours.

Prerequisite: Advanced graduate standing. Critical survey of research related to the teaching of foreign languages.

970. Internship in Foreign Language Education. 5 hours.

Prerequisite: Advanced graduate standing. Supervised practicum in teaching supervision, curriculum development, etc.

SPEECH EDUCATION (ESP)

600. Special Problems in Speech Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

705. Problems of Teaching Speech. 5 hours.

Effective teaching and classroom management techniques.

746. Internship in Teaching Speech. 1-15 hours.

Prerequisite: Ten quarter hours in curriculum and methods.

Classroom teaching experience under the direction of a supervising teacher and a University faculty member.

793. (SPC) Speech Communication for the Elementary Teacher. 5 hours.

See SPC 793.

MATHEMATICS EDUCATION (EMT)

600. Special Problems in Mathematics Education. 1-10 hours.

In-depth exploration of special topics in mathematics education of interest to individual students or groups.

635. History of Mathematics. 3 hours.

Prerequisite: MAT 254.

An historical development of selected topics in mathematics. The organization of the course is along lines of mathematics content, but the motivational and pedagogical relevance of such historical insights is emphasized.

640. Mathematics Curriculum: K-4. 3-5 hours.

Prerequisite: The entire general education requirement must have been met.

Professionalized study of the mathematics curriculum in grades K-4 including content, objectives, organization of scope and sequence and relationships of topics.

641. Mathematics Learning: K-4. 3-5 hours.

Prerequisite: The entire general education requirement must have been met.

A study of individual progress and problems in the learning of mathematics. Individual assessment, diagnostic and remedial teaching, internship.

642. Mathematics Methods in Early Childhood Education. 1-5 hours.

Prerequisite: MAT 205 and 206.

Methods and materials for teaching mathematics in nursery school, kindergarten, and grade one, two and three. The use of concrete and semiconcrete materials and informal laboratory activities appropriate for children in that age range.

655. Diagnostic Teaching of Arithmetic. 5 hours.

Prerequisite: EMT 442/642 or equivalent.

The reasons why some children have difficulty in learning mathematical concepts will be investigated in terms of the structure of elementary school mathematics as it relates to how children learn mathematical concepts. The students will be guided in using diagnostic strategies of teaching arithmetic to elementary school children.

656. Mathematics Instruction for Special Educational Needs. 5 hours.

Prerequisite: EMT 455/655 or EXC 500/700, EMT 442/642, or equivalent.

Instructional suggestions are presented for special educational needs in areas of cognition, physical, social, and emotional development. Procedures for creating individualized educational plans specific to mathematics (IEPM) will be presented.

668. Computers and Algorithms in Mathematics Education. 5 hours.

Prerequisite: MAT 254 or permission of department.

Methods and materials for teaching school mathematics with emphasis upon algorithmic constructions and computer programming.

669. Computer-Based Mathematics Instruction. 5 hours.

Prerequisite: EMT 468/668 or EMT 335 or equivalent.

Analysis and design of computer-based instruction in school mathematics. Pedagogical bases for designing computer-based instruction will be developed.

670. Advanced Design of Computer-Based Mathematics Instruction. 5 hours.

Prerequisite: EMT 469/669 and 336 or 705 or equivalent.

Advanced concepts and applications of instructional design for analyzing and creating computer courseware in mathematics education.

699. Research Seminar in Mathematics Education. 1-10 hours.

In-depth exploration of special topics in

mathematics education of interest to individual students or groups.

701. Teaching Mathematics in the Elementary School. 5 hours.

Prerequisite: Four courses in education, two courses in mathematics and either teaching experience or permission of department.

An examination of the interrelationships between contemporary mathematics for elementary schools, effective means of communicating mathematical ideas for children and elementary learning theory.

705. Problems of Teaching Secondary School Mathematics Education. 5 hours.

Prerequisite: Four courses in education.

Instructional procedures and evaluation in terms of student growth.

707. Mathematics Curriculum in the Elementary School. 5 hours.

Prerequisite: Four courses in education.

Survey of the mathematics curriculum of the elementary school, with special emphasis on contemporary programs, issues, and trends.

708. Curriculum Planning in Mathematics Education. 5 hours.

Prerequisite: Four courses in education.

Mathematics curriculum of the secondary schools with emphasis on current issues and trends.

715. Contemporary General Mathematics. 5 hours.

An approach to mathematics curriculum, teachers' procedures, and evaluation through an examination of mathematics content with emphasis on the function concept, applications, and problem solving.

725. Problem Solving in Mathematics. 5 hours.

Prerequisite: MAT 254.

Students will engage in extensive experience and practice in solving mathematical problems. This experience will serve as background for examining theories of mathematics problem solving abilities. Pedagogical techniques for secondary school mathematics problem solving will be examined and curriculum organization to incorporate problem solving in secondary school mathematics programs will be explored.

728. Teaching Number Systems in the Middle School. 5 hours.

Corequisite: MAT 502/702.

Didactics of number systems for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing natural, integer, rational, and real number structures.

729. Teaching Geometry in the Middle School. 5 hours.

Corequisite: MAT 503/703.

Didactics of geometry for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing geometric and measurement concepts.

730. Teaching Algebra in the Middle School. 5 hours.

Prerequisite: Two courses in mathematics and two courses in education or permission of department.

Didactics for algebra and number theory for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing algebraic concepts.

731. Teaching Mathematics in the Middle School. 5 hours.

Prerequisite: EMT 530/730.

Methods and materials for teaching mathematics in the middle school.

746. Internship in Teaching Mathematics. 1-15 hours.

Prerequisite: Permission of department.

Carefully supervised mathematics teaching in a secondary school.

765. Applied Project in Mathematics Education. 5 hours.

Prerequisite: Four courses in education.

Study of a mathematics education topic or problem under the direction of a faculty member. A significant written document is required.

805. Theoretical Bases of Mathematics Instruction. 5 hours.

Prerequisite: EMT 705, 708, and permission of department.

Advanced study of some theoretical bases of mathematics instruction, including philosophical and psychological bases, the study of instructional theories from the field of mathematics education, and the research that supports these theories.

808. Advanced Study of Mathematics Curriculum. 5 hours.

Prerequisite: EMT 705, 708, and permission of department.

Advanced study of mathematics curriculum; its content, scope, and sequence; the development and evaluation of mathematics programs. Emphasis is upon the identification of issues and problems for disciplined inquiry.

899. Research Seminar in Mathematics Education. 1-10 hours.

Prerequisite: Four courses in education.

Doctoral seminar on topics for research in

mathematics education. Each doctoral student is expected to participate in a seminar during each quarter of registration.

930. Thesis. 1-15 hours.

960. Educational Research in Mathematics Education. 1-15 hours.

Prerequisite: Four courses in education and advanced graduate standing.

Independent research on a problem in mathematics education.

963. Critique of Educational Literature in Mathematics Education. 5 hours.

Prerequisite: Four courses in mathematics education.

Critical interpretation and evaluation of research and theoretical writing in mathematics education. Each student will make critical reviews of significant mathematics education literature.

970. Internship in Mathematics Education. 1-15 hours.

Prerequisite: Four courses in education and permission of department.

Supervised work in mathematics education in an on-the-job leadership situation.

980. Practicum in Mathematics Education. 1-15 hours.

Prerequisite: Four courses in education and permission of department.

Completion of a supervised task in mathematics education in an approved setting.

MUSIC EDUCATION (EMU)

600. Special Problems in Music Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

746. Internship in Teaching Music Education. 1-15 hours.

Prerequisite: Permission of department.

A student is assigned in an appropriate school setting to have a supervised teaching experience in music education.

765. Applied Project in Music Education. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in music education significantly related to the student's professional task.

899. Research Seminar in Music Education. 1-10 hours.

Prerequisite: Permission of department.

A seminar stressing intensive individual investigation of music education research topics and reports.

930. Thesis. 1-15 hours.

960. Educational Research in Music Education. 1-15 hours.

Prerequisite: Permission of department.

Fundamentals of utilization of the bibliography of music education plus an overview of research practices in music education. Reading and interpretative skills with music education research literature and an introduction to descriptive and inferential quantitative methods are also included.

963. Critique of Educational Literature in Music Education. 5 hours.

Prerequisite: Permission of department.

Critical interpretation and evaluation of theoretical writing and research in the field of music education. Each student will make critical reviews of significant literature in music education.

READING EDUCATION (ERD)

600. Special Problems in Reading Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

601. The Teaching of Reading. 5 hours.

A systematic coverage of the teaching of reading, including methods, techniques and materials, from first through twelfth grades.

602. The Analysis and Correction of Reading Disabilities. 5 hours.

Prerequisite: ERD 401/601 or permission of department.

Causes of reading disability; methods of diagnosis; procedures and materials for corrective work, group and individual.

603. Teaching Reading in the Secondary School. 5 hours.

The development of reading skills needed by students in grades 7-12 for success in school subjects.

604. (EAD) Adult Literacy—Basic Reading Needs. 5 hours.

An examination of the causal factors contributing to adult illiteracy and of those methods

and materials appropriate for teaching adults to read.

605. Materials for Reading Instruction. 5 hours.

Prerequisite: ERD 401/601.

An in-depth examination of reading materials from both the theoretical and practical point of view.

606. Content Area Reading. 5 hours.

Prerequisite: An undergraduate or graduate level course in reading and permission of department.

An in-depth study of teaching reading in various subject matter areas. Emphasis placed on informal assessment procedures and appropriate instruction strategies to facilitate student reading comprehension in content classrooms.

607. Middle School Reading. 5 hours.

Prerequisite: ERD 401/601 or equivalent; permission of department.

Survey of practices, materials, and evaluation techniques utilized in the teaching of reading at the middle school level. Emphasis will be placed on the comprehensive reading program for middle school readers.

608. Teaching College Reading. 5 hours.

Prerequisite: Permission of department.

Provides a foundation in the history and development of college reading programs; analyzes instructional methods and materials; examines the reading and studying demands at the college level and the nature of the college-level reader; analyzes extant research and evaluation in the area.

642. Reading and Written Discourse for Early Childhood Education. 1-5 hours.

This course is designed to study the reading program in the elementary school. Major emphasis will be placed on the developmental reading program from kindergarten through grade 3. Content will be divided into: 1) the reading process, 2) the reading child, and 3) a special emphasis upon the practical aspects of reading instruction.

711. Computer-Based Application to Reading Education. 5 hours.

Prerequisite: ECS 710 or equivalent and ERD 401/601 or equivalent.

A history of the use of interactive electronics in reading education and an introduction to its uses in reading education today, including diagnosis, prescription, and management of instruction, as well as evaluation of software.

746. Internship in Teaching Reading Education. 1-15 hours.

Prerequisite: Permission of department.

Designed to provide reading education majors lacking actual experience teaching, experience in managing and teaching in a developmental reading setting. The intern is expected to plan instruction, manage reading groups, and teach the necessary reading skills—all in the developmental sequence defined by the classroom's materials, teacher, and instructor.

750. Supervision of the Reading Program. 5 hours.

Prerequisite: ECS 722.

Principles of supervising a total school reading program. Study of inservice reading education, reading curriculum design, and systematic coverage of innovative school reading programs, as well as methods of including reading instruction in all subject areas.

765. Applied Project in Reading Education. 5 hours.

Prerequisite: Only students in Plan A of the MEd programs are eligible.

Functional study of a topic or problem in reading education significantly related to the student's professional task or goal.

817. (EPY) Psychology of Reading. 5 hours.

Prerequisite: ERD 401/601; recommended, ERD 602.

Psychological correlates of reading ability and disability; psychological bases for instructional methods and materials.

899. Research Seminar in Reading Education. 1-10 hours.

Prerequisite: Admission to doctoral program. Required seminar for doctoral candidates in reading education. Activities include designing and defending dissertation project, evaluating research of others, and reviewing selected recent research/theoretical/practical publications in reading.

900. Trends and Practices in the Teaching of Reading. 5 hours.

Prerequisite: ERD 401/601 or equivalent or permission of department.

An intensive analysis of recent trends and practices in the teaching of reading. An advanced course in which students read widely on the teaching of reading and also intensively on one or more selected topics. A seminar-type of course. Emphasis on analyzing critically the research literature on trends and practices in the teaching of reading.

902. Advanced Diagnosis and Treatment of Reading Difficulties. 5 hours.

Prerequisite: ERD 602 and 980.

Analysis, administration, and interpretation of clinical reading and reading related tests and diagnostic instruments. Analysis, selection, and implementation of clinical teaching methods. Prescription of methods and materials for severely disabled reading cases.

930. Thesis. 1-15 hours.

960. Educational Research in Reading Education. 1-15 hours.

Prerequisite: Permission of department.

Research in reading education. To provide depth in the field of a student's specialization through pure or applied research done in collaboration with the major instructor.

963. Critique of Educational Literature in Reading Education. 5 hours.

Prerequisite: Open to EdS and doctoral students only.

Required course for EdS and doctoral candidates. Activities include locating, evaluating, and reporting on selected reading research studies (past and present); reviewing and evaluating recent summaries of reading research; developing general understanding of current research findings in selected areas; and evaluating the contributions of persons to the field of reading.

970. Internship in Reading Education. 1-15 hours.

Prerequisite: Permission of department.

A study-work course; class or conference study of problems in reading instruction encountered with remainder of time in application of principles to regular job.

980. Practicum in Reading Education. 1-15 hours.

Prerequisite: ERD 602 or equivalent and permission of department.

Instruction in the administration and interpretation of formal and informal reading tests. Also tests and equipment in several related areas are used for evaluation of children with reading problems who are tested by students enrolled in the course.

SCHOOL SOCIAL WORK (ESW)

746. Internship in Teaching School Social Work. 1-15 hours.

Prerequisite: Permission of department.

765. Applied Project in School Social Work. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in school social work significantly related to the student's professional task.

963. Critique of Educational Literature in School Social Work. 5 hours.

Prerequisite: Permission of department.
Critical interpretation and evaluation of research and theoretical writing in the field of school social work. Each student will make critical reviews of significant education literature in his specialization.

970. Internship in School Social Work. 1-15 hours.

Prerequisite: Permission of department.
A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

980. Practicum in School Social Work. 1-15 hours.

Prerequisite: Permission of department.
Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

SCIENCE EDUCATION (ESC)

600. Special Problems in Science Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

620. (ESS) Social Science and Environmental Problems. 5 hours.

See ESS 620.

623. Environmental Science Education. 5 hours.

Prerequisite: ESC 706 or permission of department.

This course focuses on environmental curriculum materials and how those materials can be implemented in the science classroom.

642. Science for Early Childhood Education. 1-5 hours.

Course especially designed for graduate majors in early childhood education.

645. Science Curriculum for the Secondary School. 5 hours.

Prerequisite: ESC 441.

Science curriculum materials suitable for use in grades 7-12 are analyzed for appropriateness to achieve specific instructional objectives.

The development and selection of curriculum materials are related to purposes of science instruction. The range of materials needed for pupils in grades 7-12 is included.

646. Methods of Teaching Science in the Secondary School. 5 hours.

Prerequisite: ESC 441.

Using classroom, laboratory and field experiences, skills in science teaching methods, instructional materials and evaluation suitable for pupils in grades 7-12 are developed. These include using teaching strategies with different instructional materials and evaluation schemes for effective science instruction.

699. Research Seminar in Science Education. 1-10 hours.

A seminar for master's level students in science education dealing with the acquisition and application of research and evaluation skills for planning and interpreting science education research.

702. Teaching Science in Elementary School. 5 hours.

Prerequisite: Permission of department.
Instructional procedures, materials, and evaluation techniques in teaching biological and physical science through scientific process in the elementary school.

703. Teaching Science to Students with Special Educational Needs. 5 hours.

Develops an understanding of the basis and practice of modifying science programs/teaching for students with special educational needs and introduces skills for modifying science programs/teaching strategies.

704. Teaching Strategies for Middle and Secondary School Science Teachers. 5 hours.

Prerequisite: EMS 303.

Designed to improve the instructional competencies of students preparing to teach science in the middle school. The course includes preparation in the planning and implementation of instructional strategies.

706. Computer-Based Instruction in Science Education. 5 hours.

Prerequisite: ESC 448 and/or experience with instructional computing including use of BASIC or PILOT.

Application of computers to science teaching. Use of the computer in algorithmic problem solving, management, record keeping, and data manipulation is covered. Attention is given to fully integrating computers into classroom activities. Materials development with instructional languages is included.

708. Curriculum Planning in Science Education. 5 hours.

Prerequisite: Teaching certificate or equivalent.

Problems of the science curriculum from early childhood to high school concerns are studied. The social, psychological, philosophical and practical influences on science curriculum are applied to the process of selecting developing curriculum materials.

746. Internship in Teaching Science. 1-15 hours.

Prerequisite: Permission of department.

Supervised internship in planning and teaching science lessons. Periodical seminars are held to discuss common problems and their solutions.

765. Applied Project in Science Education. 5 hours.

Prerequisite: Permission of department.

The functional study of a topic or problem in science education significantly related to the student's professional responsibilities.

806. Affective Domains in Science Education. 5 hours.

Prerequisite: EPY 810.

This course deals with fundamental values embodied in science and technology by demonstrating how science educators can formulate objectives, use instructional techniques, and implement evaluation procedures directed toward important outcomes that relate to the affective domain.

812. (PS) Science Writing and Literature Retrieval. 5 hours.

See PS 812.

820. Science Supervision. 5 hours.

Skills are developed in role definition, conducting needs assessments, designing and conducting science teacher workshops, and planning and executing comprehensive science program evaluations.

899. Research Seminar in Science Education. 1-10 hours.

Doctoral student integrate theoretical construction in research design and analysis into practical application to science education research, both published and proposed. Each doctoral candidate is expected to attend at least four quarters or a minimum of eight quarter hours of credit is required.

901. Problems of Teaching College Science. 5 hours.

The major goal of this course is to develop professional skills needed for college-level teaching in science fields. Theory and practice

with instructional objectives, teaching methods, testing and evaluation and documenting effective teaching are included. Each student prepares instructional materials in his/her science field.

902. History and Theory of Science Education. 5 hours.

The course's goal is to enable students to establish a reference scheme within which they can understand how our past has influenced today's science teaching practices and to predict future science teaching practices. Contributions by science teachers and learning theorists which have influenced classroom practices and curriculum development are examined.

930. Thesis. 1-15 hours.

960. Educational Research in Science Education. 1-15 hours.

Prerequisite: Permission of department.

A research practicum for the student who is involved in a research problem. It may involve such activities as searching the literature, collection of data, or processing data.

963. Critique of Educational Literature in Science Education. 5 hours.

Critical interpretation and evaluation of selected research and theoretical writings in science education. Each student also completes a critical review of the literature in an area of special interest.

970. Internship in Science Education. 1-15 hours.

Prerequisite: Permission of department.

A study of problems related to the development of instructional material and their use in classroom settings based on the student's professional responsibility.

SOCIAL SCIENCE EDUCATION (ESS)

600. Special Problems in Social Science Education. 1-10 hours.

Prerequisite: Eligible for teacher certification. Intensive study of a problem in social science education through library research or collection and analysis of primary data.

620. (ESC) Social Science and Environmental Problems. 5 hours.

Prerequisite: One course in geography, forty hours of social science, or permission of department.

A field study of land-use and energy problems

of rural and urban Georgia relating various environmental considerations to social sciences content and methods.

642. Social Studies for the Young Child. 5 hours.

An examination and application of social studies curriculum models relevant to instruction for preschool and primary level children.

699. Research Seminar in Social Science Education. 5 hours.

Consideration of fundamentals of research in social science education. Required of master's degree candidates.

701. Teaching of Geography. 5 hours.

Prerequisite: One course in geography, forty hours of social science.

Geographic principles and the history of geography in the school curriculum, literature of the field, including textbooks; the application of special techniques, i.e., field methods and map study; and geographic evaluation.

703. Teaching Social Studies in the Elementary School. 5 hours.

The examination and application of instructional procedures and materials focusing upon the cognitive and affective processes relevant to elementary social studies education.

704. Teaching Social Studies in the Middle Grades. 5 hours.

Prerequisite: Eligible for teacher certification. The examination and application of instructional procedures and materials focusing upon the cognitive and affective processes relevant to middle grades social studies education.

705. Problems of Teaching Secondary Social Studies. 5 hours.

Selection, utilization, and evaluation of teaching procedures in history and the social sciences to various ability levels of students.

708. Curriculum Planning in Social Sciences. 5 hours.

Selection, utilization, and evaluation of curricular content and materials in history and the social sciences appropriate to various ability levels of students.

720. Economic Education in the Social Science Curriculum. 5 hours.

Corequisite: ECN 545/745.

Examination and evaluation of instructional strategies and materials for teaching basic economic concepts in an integrated K-12 social science curriculum with emphasis on

utilizing a decision-making model for analyzing contemporary economic problems.

722. Teaching Politics, Government, and Citizenship. 5 hours.

Prerequisite: ESS 336 and an introductory political science course.

Review of fundamentals and current issues in American politics from lecture, readings, and roundtable discussions with political leaders; examination of the role of teachers and schools in political socialization; and demonstration and analysis of teaching procedures and materials for improving political/citizenship education in the schools.

723. Citizenship Education for Elementary Grades. 5 hours.

Prerequisite: ESS 342 or 340 or equivalent and ESS 546 or equivalent.

The course is designed to demonstrate the importance and feasibility of teaching political/citizenship concepts and skills in elementary grades and present methods and media for conducting citizenship education in grades 1-6.

738. Applications of Computer-Based Instruction in Social Science Education. 5 hours.

Prerequisite: ESS 338 or permission of department.

Issues, development and evaluation of interactive technology with social science content examined. Emphasis is on adapting/developing microcomputer software for social studies classroom instruction.

746. Internship in Teaching Social Science. 1-15 hours.

Teaching internship in public school under supervision of a classroom teacher and a faculty member in social science education.

755. Teaching Social Science to Students with Special Education Needs. 5 hours.

Develops understanding of the characteristics of exceptional students and provides a basis for modifying social studies programs, teaching strategies, and materials to meet needs of exceptional students. Credit will not be allowed for both ESS 555/755 and EXC 500/700.

765. Applied Project in Social Science Education. 5 hours.

Prerequisite: Candidate for T-5 or T-6 certification.

Applied research project in social science education related to a present or potential teaching position.

899. Research Seminar in Social Science Education. 1-10 hours.

Prerequisite: ESS 699 or equivalent.

Consideration of research design problems in social science education. A minimum of three hours credit is required of doctoral candidates.

930. Thesis. 1-15 hours.

960. Research in Social Science Education. 1-15 hours.

Directed independent research in social science education.

963. Critique of Educational Literature in Social Science Education. 5 hours.

A review and analysis of research and other literature in social science education.

970. Internship in Social Science Education. 1-15 hours.

Supervised internship in instruction, curriculum development, supervision, or evaluation in social science education.

(See also GGY 701 and 702.)

STUDENT TEACHING (EST)

600. Special Problems in Teaching. 1-10 hours.

Prerequisite: Permission of department.

Based upon individual needs assessments of students, instruction is provided in the teaching area including assigned readings, individual projects, and seminar discussions.

710. Fundamentals in the Supervision of Student Teaching. 5 hours.

Prerequisite: Limited to supervising student teacher personnel and permission of department.

Introduction to the theory, principles, and practices in the supervision of student teaching and other professional laboratory experiences.

711. Internship in the Supervision of Student Teaching. 5 hours.

Prerequisite: EST 510/710, a student teacher has been assigned, and permission of department.

A study seminar program; directed supervision of student teaching and other field experience.

VOCATIONAL EDUCATION, DIVISION OF AGRICULTURAL EDUCATION (EAG)

600. Special Problems in Agricultural Education. 1-10 hours.

Specialized training appropriate to the needs of the individual, involving intensive library investigation or the collection and analysis of data pertinent to a given problem.

705. Problems of Teaching Agricultural Education. 5 hours.

Instructional procedures and evaluation of teaching in terms of pupil growth.

746. Internship in Agricultural Education. 1-15 hours.

Prerequisite: Permission of department.

Identification and study of selected problems confronting a beginning teacher with emphasis upon program planning, class preparation, instructional strategies and evaluation techniques.

765. Applied Project in Agricultural Education. 5 hours.

Prerequisite: ERS 601 and permission of department.

Functional study of a problem in agricultural education significantly related to the student's professional interest and responsibility.

(For other course offerings in Agricultural Education, see listing under Vocational Education).

BUSINESS EDUCATION (EBE)

600. Special Problems in Business Education. 1-10 hours.

Specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

601. Business Communication. 5 hours.

Theory and practice in the processes (thinking, reading, writing, speaking and listening) involved in business communication.

699. Research Seminar in Business Education. 1-10 hours.

A seminar for master's level students in business education dealing with proposed research projects and critiques of the literature.

700. Curriculum Planning in Business Education. 5 hours.

Prerequisite: Permission of department.

Basic principles and procedures of curriculum construction; stresses curricular content and organization; use of job analysis.

701. Theory and Principles in Shorthand and Typewriting. 5 hours.

Prerequisite: EBE 302, 305, or equivalent.

Teaching theory, psychological principle of skill building, materials development and evaluation.

702. Instructional Strategies for Basic Business Education. 5 hours.

Organization, standards, evaluation, textbooks, materials, special teaching techniques, motivation, individual differences in the teaching of basic business courses.

703. Word Processing and Office Systems. 5 hours.

Organization, module development, objectives, standards, evaluation, textbooks, materials, equipment, teaching techniques, individual differences in the teaching of office practice and office machines.

704. Instructional Strategies for Accounting Teachers. 5 hours.

A course for beginning and experienced teachers aimed at helping to deal adequately with the basic factors in bookkeeping-accounting. It also deals with specific suggestions for teaching selected subject matter areas in bookkeeping-accounting. Materials, teaching procedures, standards, and evaluation are emphasized.

705. Problems of Teaching Business Education. 5 hours.

Instructional objectives, procedures and evaluation of teaching in terms of student growth.

707. Office Management. 5 hours.

Scientific office management; principles, equipment, supervision, information management, methods and procedures, job organization and evaluation, selection and training of office personnel.

708. Business Data Processing for Teachers. 5 hours.

Functions and techniques of data handling, unit record systems, electronic data processing systems, number systems, central processing unit, internal processing, the programming function, input-output, media, magnetic tapes.

709. COBOL Business Applications for Teachers. 5 hours.

Prerequisite: EBE 508/708, CSC 503/703, or permission of department.

Application of basic knowledge of programming to problems in inventory control, accounts receivable and payroll. Attention is given to methodology of teaching these applications.

710. Systems Analysis and Design for Teachers. 5 hours.

Prerequisite: EBE 509/709, CSC 503/703, or permission of department.

Provides technical background and knowledge for teaching advanced programming on systems design. Includes project management, documentation standards, hardware, software, forms design, feasibility studies, file organization, systems design, and development.

711. Testing and Evaluation in Business Education. 5 hours.

Prerequisite: Permission of department.

Theory, construction of educational tests including criterion selection and development, item construction, item analysis, text validation; use of standardized tests in business education subjects.

712. History and Philosophy of Vocational Business Education. 5 hours.

Origin and development of vocational education with emphasis upon business education; federal legislation for vocational education, and administration of federally aided programs; vocational and technical education programs in industry; changing manpower needs and new media and retraining procedures as instruments for updating vocational programs.

746. Internship in Teaching Business Education. 1-15 hours.

Prerequisite: Permission of department.

Prospective or in-service teachers develop and/or refine competencies related to innovation and experimentation in classroom teaching, individual and program development and evaluation, development and revision of instructional materials, design and revision of courses to reflect changing needs of business, recognition and treatment of individual needs and differences, and evaluation of achievement in a variety of business fields.

765. Applied Project in Business Education. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in

business education significantly related to the student's professional task.

776. Consumer Financial Planning. 5 hours.

Prerequisite: ECN 105 or 545/745 or equivalent.

Focuses on specific consumer problems that students encounter during school years, as well as those they will confront after leaving school; emphasizes how our economy functions, making purchases wisely, managing money to best advantage, evaluating sales and advertising practices, guarding against unwise buying practices and dishonest selling practice.

899. Research Seminar in Business Education. 1-10 hours.

Prerequisite: Permission of department.

Each specialist candidate and each doctoral candidate is expected to attend a seminar during each quarter of residence. A minimum of three quarter hours of credit is required for doctoral candidates.

900. Curriculum Planning in Business Education (Advanced). 5 hours.

Prerequisite: Permission of department.

Theory and process underlying curriculum design; models, issues and trends; needs assessment; and curriculum revision.

902. Administration and Supervision of Business Education. 5 hours.

Prerequisite: Permission of department.

Administrative and supervisory relationships in state and local programs, staff qualifications, program development and evaluation.

910. Coordinating Work Experience Programs in Business Education. 5 hours.

Prerequisite: Permission of department.

Planning, developing, coordinating, and evaluating occupational experience programs analysis of job as textbook for planning and individualizing related instruction.

930. Thesis. 1-15 hours.

960, 961, 962. Educational Research in Business Education. 5 hours each.

Prerequisite: Four courses in education and advanced graduate standing.

Independent or group research designed to develop and refine the prospectus or to conduct in-depth research into topics of special value to the field.

963. Critique of Educational Literature in Business Education. 5 hours.

Prerequisite: ERS 401/601.

A critical review and interpretation of significant literature in the field. The overall objec-

tive is to develop knowledge of the state of the art in terms of strengths and limitations of business education literature, and to provide students an opportunity to critique materials of special interest.

970, 971, 972. Internship in Business Education. 5 hours each.

Prerequisite: Permission of department.

A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

980, 981, 982. Practicum in Business Education. 5 hours each.

Prerequisite: Permission of department.

Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

DISTRIBUTIVE EDUCATION (EDE)

600. Special Problems in Distributive Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

699. Research Seminar in Distributive Education. 1-10 hours.

A seminar for master's level students in education dealing with proposed research projects and critiques of the literature.

700. Distributive Occupational Experience: Sales. 5 hours.

Directed work experience in cooperating distributive business; 500 hours in sales or sales-supporting business.

701. Distributive Occupational Experience: Junior Management. 5 hours.

Directed work experience in cooperating distributive business; 500 hours in supervisory and junior management positions.

705. Problems of Teaching Distributive Education. 5 hours.

Prerequisite: Four courses in education.

Instructional procedures and evaluation in terms of student growth.

706. Curriculum Planning in Distributive Education. 5 hours.

A study of the history, philosophy, and principles of curriculum development in distributive education; study of evaluation of

curricula in various programs in operation; procedures, media, methods, and factors involved in the development of distributive education curricula including DECA and new trends in the field. Designed for experienced teachers, administrators, post secondary personnel and supervisors of distributive education.

709. Analysis and Implementation of Advertising Media in Vocational Education. 5 hours.

A study of applied advertising, display and sales promotion techniques with emphasis on developing a high level of knowledge skills, and attitudes in advertising printed and broadcast media, display work, and sales promotion activities. Application will be made to curriculum development and teaching techniques needed by the secondary and post-secondary teacher. Applicable only to degrees in College of Education or for certification requirements.

710. Analysis and Implementation of Sales and Marketing Functions in Vocational Education. 5 hours.

A study of selling techniques and sales related activities in retailing, wholesaling, industrial and service sectors of business communities. Emphasis will be placed on the development and application of sales related competencies to marketing and distributive education programs and other appropriate programs in vocational education. Applicable only to degrees in College of Education or for certification requirements.

746. Internship in Teaching Distributive Education. 1-15 hours.

Prerequisite: Permission of department.

Identification of deficiencies and areas of need to up-grade technical and/or professional competencies. May involve the development of materials and the application of the products to classroom settings. May be used to provide initial practicum experiences under direct assistance of a department staff member for new teachers in the field.

765. Applied Project in Distributive Education. 5 hours.

Prerequisite: ERS 401/601 and permission of department.

Functional study of a topic or problem in education related to the student's professional preparation. It involves the use of basic research and writing techniques.

Each M.Ed. candidate who plans to complete the Applied Project should attend a seminar prior to enrolling in EDE 765. A minimum of one quarter hour credit is recommended.

(For other course offerings in Distributive Education, see listings under Vocational Education.)

HEALTH OCCUPATIONS EDUCATION (EHO)

600. Special Problems in Health Occupations Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

700. Performance Specification—Health Occupations. 5 hours.

Study of current and emerging roles in the health field and methods of identifying and specifying performance requirements for specific jobs as a basis for instructional planning.

701. Instructional Strategies in Health Occupations Education. 5 hours.

Study of methods and techniques for optimizing learning conditions for students of varying ability levels in community, clinical, laboratory and classroom settings.

703. Instructional Planning in Health Occupations Education. 5 hours.

Systems technology as applied to selecting and organizing course content, maximizing media utilization, managing the learning environment and assessing student achievement in classroom, laboratory, and clinical settings.

705. Problems of Teaching Health Occupations. 5 hours.

Prerequisite: Four courses in education.

Instructional procedures and evaluation in terms of student growth.

746. Internship in Teaching Health Occupations. 1-15 hours.

Prerequisite: EHO 500/700, 501/701, 503/703 or participation in summer New Teacher Institute.

Teaching experience under the supervision of the instructor; seminar provides opportunities to analyze problems and explore potential solutions.

765. Applied Project in Health Occupations Education. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in education significantly related to the student's professional task.

HOME ECONOMICS EDUCATION (EHE)

600. Special Problems in Home Economics Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

701. Methods of Teaching Home and Personal Management. 5 hours.

Prerequisite: HMC 364 and 368 or equivalent. The purposes of this course are to help students: a) to gain increased understanding of ways to teach home and personal management to pupils at the high school level, b) develop an appreciation of the contribution that good management can make to successful teaching and learning, and c) plan units and develop resource material appropriate for use in teaching home and personal management.

705. Problems of Teaching Home Economics. 5 hours.

Prerequisite: Four courses in education or permission of department. The course is based on student-identified problems and includes instructional strategies, resource materials, and readings in current publications.

708. Curriculum Planning in Home Economics. 5 hours.

Prerequisite: Four courses in education and teaching experience. The course is designed to develop curriculum at both local and state levels and may focus on a particular component such as one occupational preparation program or upon a broader range of curriculum.

746. Internship in Teaching Home Economics Education. 1-15 hours.

Prerequisite: Permission of department. This experience is designed to meet a special need of the student such as classroom teaching, occupational update, supervision, or administration.

760. Special Problems in Nutrition Education. 5 hours.

765. Applied Project in Home Economics Education. 5 hours.

Prerequisite: Permission of department. The student's project will involve library investigation and the collection of original data pertinent to a chosen problem related to

the student's professional task. The report will be written in acceptable thesis format.

(For other course offerings in Home Economics Education, see listings under Vocational Education.)

INDUSTRIAL ARTS EDUCATION (EIA)

600. Special Problems in Industrial Arts Education. 1-10 hours.

Individual study and research in an industrial arts area.

702. Advanced Metal Technology. 5 hours. One lecture and four double lab periods.

Prerequisite: EIA 310. Individual problem in advanced metal technology, with experience in machine tools, welding and foundry.

704. Advanced Electronics Technology. 5 hours. One lecture and four double lab periods.

Prerequisite: EIA 320. Practices of communicating through electrical media.

705. Problems of Teaching Industrial Arts. 5 hours.

Study of methods for improving instructional procedures and evaluation in the industrial arts classroom and laboratory.

706. Drafting. 5 hours.

Prerequisite: EIA 326. Individual problems in advanced drafting.

710. Principles of Industrial Arts Education. 5 hours.

History, principles, function, organization, and evaluation of industrial arts education.

711. Organization of Subject Matter in Industrial Arts. 5 hours.

Prerequisite: Four courses in education including EIA 102 and permission of department. Selection, organization, presentation and interpretation of subject matter in industrial arts. Students will work out job plans, instruction sheets, and plan course content.

712. Administration of Industrial Arts. 5 hours.

Prerequisite: Four courses in education. Interpretation of the industrial arts curriculum in terms of school and community needs. Organization and reorganization of shop programs. Cost accounting of materials, equipment, housing and supplies, care and repair of tools and equipment. The duties of the industrial arts administrator and supervisor. Shop planning and layouts.

713. Special Problems in Industrial Arts. 5-10 hours.

Prerequisite: Four courses in education including EIA 102 and 320.

Improvement of curriculum and teaching procedures through intensive training in particular area of interest.

714. Seminar in Industrial Arts and Handicrafts. 5 hours.

Advanced study in industrial arts and handicraft. Research and experimentation in selected areas of the industrial arts.

715. Industrial Design for Technical Courses. 5 hours.

The study and practice of industrial design as it relates to improvement of industrial arts concepts in technical courses.

720. (EAV) Photography in Instruction. 5 hours.

See EAV 720.

721. (EAV) Graphic Technology. 5 hours.

See EAV 721.

722. (EAV) Advanced Graphic-Photographic Techniques. 5 hours.

See EAV 722.

765. Applied Projects in Industrial Arts. 5 hours.

Functional study of topic or problem in industrial arts education significantly related to the student's professional task.

TRADE AND INDUSTRIAL EDUCATION (ETI)

600. Special Problems in Trade and Industrial Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

601. Introduction to Teaching Trade and Industrial Subjects. 5 hours.

Prerequisite: Appropriate occupational experience.

Corequisite: ETI 402/602.

An overview of teaching trade and industrial subjects for new teachers. Emphasis will be placed on the basic beliefs, concepts and practices of teaching in trade and industrial education.

602. Survey of Instructional Strategies and Management Techniques in Trade and Industrial Education. 5 hours.

Prerequisite: Appropriate occupational experience.

Corequisite: ETI 401/601.

A survey of concepts, instructional strategies and management techniques required for entry level teaching in trade and industrial education.

700. Occupational Analysis. 5 hours.

Techniques in analyzing occupations and jobs within an occupation for instructional content.

701. Principles and Practices in Teaching Industrial Education. 5 hours.

Principles and practices of teaching manipulative skills and related technology; organization of subject matter, lesson planning and student appraisal.

702. Curriculum Planning for Trade and Industrial Education. 5 hours.

Principles and procedures in the development of curricula for trade and technical courses.

703. Instructional Materials Development in Trade and Industrial Education. 5 hours.

Development of courses of study, course outlines, instructional material, and organization of course content.

704. School Laboratory Organization and Management. 5 hours.

Principles involved in the physical planning of school shops and laboratories; selection of tools and equipment.

705. History and Policies of Trade and Industrial Education. 5 hours.

History of trade and industrial education; contributions of vocational educators; and principles and laws under which programs operate.

708. Development of Diversified Cooperative Training Program. 5 hours.

Analysis of community training needs; relations between school, community, and industry, and organization of DCT programs.

709. Selection and Utilization of Instructional Material for Cooperative Programs. 5 hours.

Selection, organization and application of source material for general and directly related study in part-time cooperative classes.

710. Problems in Trade and Industrial Education. 5 hours.

Specialized training appropriate to the needs of the individual.

711. School Laboratory and Industrial Safety. 5 hours.

Principles and practices involved in safety in school classrooms, shops, and laboratories.

746. Internship in Teaching Trade and Industrial Education. 1-15 hours.

Prerequisite: Completion of New Teachers' Institute and/or coursework in the areas of methods of teaching and/or curriculum development.

Supervised teaching experience in an occupational area. Problems of curriculum materials and methods for experienced teachers in lieu of regular student teaching.

765. Applied Project in Trade and Industrial Education. 5 hours.

Prerequisite: Completion of a master's degree in ETI, and/or completion of graduate coursework in the areas of methods of research, methods of teaching and/or curriculum development.

A systematic research and development effort conducted by a student under supervision of departmental faculty to address an educational concern.

963. Critique of Educational Literature in Trade & Industrial Education. 5 hours.

A review and critique of educational literature designed to prepare a student for an applied project, a special educational problem, and/or to develop a philosophy of trade and industrial education.

(For other course offerings in Trade and Industrial Education, see listings under Vocational Education).

VOCATIONAL EDUCATION (EVO)

600. Special Problems in Vocational Education. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

610. Principles and Practices of Career Education. 5 hours.

An overview of Career Education including major theories of career development and adjustment, program characteristics, leadership and administration, and curriculum materials and other resources.

701. Individualizing Instruction for Vocational Education. 5 hours.

Prerequisite: EPY 304 or equivalent and course in curriculum planning.

Course provides background and knowledge required for developing and implementing individualized instruction for vocational education programs at the secondary and post-secondary levels. Methods will be applied specifically to vocational education curricula.

703. Coordination of Cooperative Vocational Education Programs. 5 hours.

Prerequisite: Permission of department.

Standards and selection of students and training stations and guidance of students in cooperative vocational education programs.

705. Problems of Teaching Vocational Education. 5 hours.

Prerequisite: Four courses in education.

Instructional procedures and evaluation in terms of student growth.

706. Methods and Materials for Youth Organizations. 5 hours.

Prerequisite: Four courses in education.

An overview of the purposes of youth organizations in vocational education; includes the contributions of youth organizations to the vocational education curricula; planning, directing, and evaluating programs of work, including group and individual projects carried out at home, at school, and in the community; techniques of leadership training and group development. Designed for teachers, supervisors, and administrators of vocational education.

720. Evaluation of Vocational Programs. 5 hours.

Prerequisite: Teaching or administrative experience.

Designed to prepare vocational educators to identify and select evaluation models, collect and analyze data, report data, and relate evaluation to program change for local and state vocational education programs.

725. Program Projection in Vocational Education. 5 hours.

The course is designed to develop the competencies necessary for the development of annual and long range plans for vocational education programs educational systems: competencies include data collection, writing program objectives, writing plans and identifying alternatives.

746. Internship in Teaching Vocational Education. 1-15 hours.

A planned program of student activities which takes place in an ongoing work setting. These activities should be centered around a substantive area of vocational education such as administration, supervision, and curriculum or staff development.

755. Teaching Vocational Education to Students with Special Education Needs. 5 hours.
Prerequisite: Admission to teacher education in one of the departments within the Division of Vocational Education or the Graduate School.

Designed to provide vocational education teachers with an understanding of the special needs learner, whereby their instructional program and teaching strategies can be modified to meet the needs of these learners.

765. Applied Project in Vocational Education. 5 hours.

A practical research project in vocational education designed for the preparation of vocational administrators at either the master's or specialist level.

803. Improving Personnel Performance in Vocational Education. 5 hours.

Leadership functions for improving the job performances of full and part-time faculty and staff in vocational schools and local vocational programs. Helping such personnel to define and achieve their job objectives and goals and to assess their performance.

806. Administration and Supervision of Vocational Education Programs. 5 hours.

Making provisions for the operation of schools and local school programs that offer vocational education so that their objectives can be defined and achieved.

899. Research Seminar in Vocational Education. 1-10 hours.

A seminar for doctoral candidates in vocational education dealing with the development of research skills necessary to identify an appropriate dissertation topic and prepare the prospectus necessary for admission to candidacy.

900. Curriculum Planning in Vocational Education. 5 hours.

902. Evaluation in Vocational Education. 5 hours.

Designed to guide teachers in the development of methods and techniques for evaluating instructional programs and for evaluating student development.

903. Supervision of Vocational Teaching. 5 hours.

A philosophical base for vocational teacher education; the identification of problem areas and the determination of relative emphasis various agencies should place on problem areas; projection of plans for supervised teaching program.

904. Problems in Vocational Education. 5 hours.

908. Foundations of Vocational Education. 5 hours.

Overview of history, legislation, premises, and curriculum interrelationships of vocational education and practical arts programs.

930. Thesis. 1-15 hours.

946. Internship in Teaching Vocational Education. 1-15 hours.

960. Educational Research in Vocational Education. 1-15 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual's research project. The student's project should involve the development of a given research project.

963. Critique of Educational Literature in Vocational Education. 5 hours.

Critical interpretation and evaluation of research and theoretical writing in the field of vocational education. Each student will make critical reviews of significant education literature in vocational education.

970. Internship in Vocational Education. 1-15 hours.

Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

980. Practicum in Vocational Education. 1-15 hours.

A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

ENGLISH (ENG)

Coburn Freer

(Robert E. Park Hall, North Campus)

Doctoral language requirement: two foreign languages (French, German, or Latin). Other requirements for the MA, MAT and PhD degrees may be obtained from the director of graduate studies in English. For up-to-date listings of courses, as well as degree requirements, see the director of graduate studies in English. There will probably be some new courses that are not listed below.

Two courses in English numbered 400T or above are prerequisite for admission to the following courses.

600T. (LIN) History of the English Language. 5 hours.

The development of present English through the stages of Old English, Middle English, and early Modern English. Emphasis is placed on the growth of the vocabulary and changes in pronunciation, although grammatical changes receive some attention. Elementary phonetics and phonemics are studied in connection with sound change and dialectal variations in pronunciation.

602T. (LIN) Dialectology. 5 hours.
See LIN 602T.

604T. The Structure of Black English. 5 hours.
See LIN 604T.

606T. (LIN) Old English. 5 hours.

The language and literature of England before the Norman Conquest, with reading of selected texts.

607T. (LIN) Middle English. 5 hours.

A survey of Middle English language and literature, exclusive of Chaucer and the drama. Some previous acquaintance with Old English or Middle English is desirable but not required.

611T. (LIN) English Grammar. 5 hours.
English grammar in the scholarly tradition of Curme and Jespersen.

613T. (LIN) English Grammar: Phonology and Morphology. 5 hours.
The phonological and morphological structure of Modern English.

615T. (LIN) Transformational Syntax. 5 hours.
See LIN 615T.

619T. Study of the English Language. 5 hours.
The nature, structure, and varieties of the English language in vocabulary, grammar, pronunciation, and semantics.

621T. Old English Literature. 5 hours.
Prerequisite: ENG/LIN 406T/606T or equivalent.

Prose and poetry of the Old English period, exclusive of *Beowulf*, with emphasis on poetry. Works will be read in Old English, with supplementary translations.

622T. Beowulf. 5 hours.
Prerequisite: ENG/LIN 406T/606T or reading knowledge of Old English.

The poem in the original Old English, with attention to important critical studies.

624T. Chaucer. 5 hours.
Canterbury Tales, *Troilus and Criseyde*, and minor poems.

625T. Medieval Drama. 5 hours.
English drama from its beginnings to the opening of the public theater in 1576.

629T. English Literature to 1500. 5 hours.
Advanced study of English poetry and prose to 1500. Both the works of major authors and representatives of the various genres will be treated.

630T. Elizabethan Literature. 5 hours.
Poetry and prose of the earlier English Renaissance, such as works by More, Sidney, and Spenser, and Shakespeare's sonnets.

631T. Spenser. 5 hours.
A study of the *Faerie Queene*, the *Shepherd's Calendar*, and the *Amoretti*, with attention to Spenser's other works and his literary context.

632G. Shakespeare: Part I. 5 hours.
The early plays.

633G. Shakespeare: Part II. 5 hours.
The later plays.

634T. Renaissance Drama. 5 hours.
English drama from 1576 to 1642, exclusive of Shakespeare, emphasizing dramatists such as Marlowe, Jonson, Webster, and Middleton.

635T. 17th Century Poetry. 5 hours.
Major English poets of the period, such as Donne, Jonson, Herbert, and Marvell.

636T. 17th Century Prose. 5 hours.
Works of fiction and non-fiction by major writers of the later English Renaissance, such as Donne, Bacon, Hobbes, Browne, Milton, and Bunyan.

637T. Milton. 5 hours.

The works and times of John Milton.

639T. English Renaissance Literature. 5 hours.

Advanced study of the critical and historical principles in English Renaissance literature, dramatic and nondramatic.

640T. Restoration and 18th Century English Drama. 5 hours.

Outstanding dramatists of the period: Dryden, Wycherley, Addison, Goldsmith, Sheridan, and others.

642T. Early 18th Century Prose and Poetry. 5 hours.

Poetry and prose of the earlier 18th Century, emphasizing Addison, Steele, Defoe, Swift, and Pope.

643T. The 18th Century English Novel. 5 hours.

The English novel from Defoe to 1800, including novels by Richardson, Fielding, Smollett, and Sterne, the Gothic novel, and the novel of purpose.

644T. The Age of Johnson. 5 hours.

English literature of the late 18th Century, emphasizing Johnson, Boswell, and Blake.

649T. English Literature from 1660 to 1798. 5 hours.

Advanced study of the critical and historical principles in English literature of the Restoration and 18th Century.

650T. Early Romantic Literature. 5 hours.

Wordsworth, Coleridge, and other writers.

651T. Later Romantic Literature. 5 hours.

Byron, Shelley, Keats, and other writers.

652T. The 19th Century British Novel. 5 hours.

The development of the British novel in the 19th Century.

653T. Victorian Poetry. 5 hours.

Tennyson, Browning, and Arnold.

654T. Victorian Prose. 5 hours.

A study of the major Victorian prose writers, chiefly Carlyle, Newman, Mill, Ruskin, and Arnold.

665T. (DRA) Modern Drama. 5 hours.

The drama of Europe and America from the realism of Ibsen and Strindberg to the present.

666T. 20th Century British Poetry. 5 hours.

British poetry since the 1890's.

667T. The 20th Century British Novel. 5 hours.

Fiction of such representative British novelists of the 20th Century as Bowen, Conrad, Forster, Joyce, Lawrence, Waugh, Woolf, and Greene.

668T. Modern Irish Literature. 5 hours.

Fiction, poetry and drama of the Irish Renaissance and after.

669T. 20th Century British and American Literature. 5 hours.

Advanced study of the critical and historical principles of literature in English from about 1895 to 1950.

670T. Early American Writing. 5 hours.

American literature from the beginning through Irving.

671T. American Romanticism. 5 hours.

Representative works of the Romantics and Transcendentalists, with emphasis on Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, and Dickinson.

672T. American Realism and Naturalism. 5 hours.

Representative work of the realists and naturalists, with emphasis on James, Clemens, Crane, Norris, and Dreiser.

673T. American Poetry to 1900. 5 hours.

A study of representative poets from Edward Taylor through Stephen Crane.

674T. The American Novel to 1900. 5 hours.

The works of major novelists from Cooper through Norris.

675T. Southern Literature. 5 hours.

Literary achievement in the South from 1610 to the present, with emphasis upon Poe, Clemens, and Faulkner.

676T. 20th Century American Poetry. 5 hours.

American Poetry from the Imagist Movement to the present.

677T. The 20th Century American Novel. 5 hours.

The American novel since World War I.

679T. American Literature to 1900. 5 hours.

Advanced study of the critical and historical principles of American literature from the beginning to 1900.

680T. Advanced Creative Writing. 5 hours.

Prerequisite: Permission of department.

Advanced instruction in the craftsmanship of poetry and fiction writing.

681T. History of Literary Criticism. 5 hours.

A survey of literary theory from Plato to the early modern period, examining changing concepts of genre, style, and the social function of literature.

682T. Modern Literary Theory and Criticism. 5 hours.

Major themes and movements in 20th Century criticism.

684T. Theory and Practice of English Prose Style. 5 hours.

Theory and practice of English prose style from classical times to the present, with emphasis on rhetorical theory and writing styles since 1500.

686T. Bibliography and Methods of Research. 5 hours.

Bibliographical analysis and description and the study of research materials and methods.

689T. Apprenticeship in College English. 1 hour. (Max. 3 hours.)

An apprenticeship in the teaching of freshman composition and of sophomore literature for MAT candidates.

810T. Seminar in English Linguistics. 5 hours.

Special topics in English linguistics. Topics will vary. Consult the department for the specific topics to be offered in a given year.

820T. Seminar in Medieval Topics. 5 hours. (Max. 15 hours.)

Special topics in Medieval literature. Topics will vary. Consult the department for the specific topics to be offered in a given year.

830T. Topics in Nondramatic English Literature, 1500-1660. 5 hours. (Max. 15 hours.)

Special topics in nondramatic English literature. Topics will vary. Consult the department for the specific topics to be offered in a given year.

835T. Seminar in Elizabethan Drama. 5 hours. (Max. 15 hours.)

Special problems in Elizabethan drama.

840T. Seminar in 18th Century Literature. 5 hours. (Max. 15 hours.)

Swift, Pope, Johnson, Fielding, or Blake.

850T. Seminar in English Romantic Literature. 5 hours. (Max. 15 hours.)

A major writer or special topics of the period.

855T. Seminar in Victorian Literature. 5 hours. (Max. 15 hours.)

Tennyson, Browning, and Arnold.

860T. Seminar in Modern Literature. 5 hours. (Max. 15 hours.)

An author or problem in 20th Century British or American literature.

870T. Seminar in American Literature. 5 hours. (Max. 15 hours.)

A research course on special problems in American literature.

875T. Seminar in Southern Literature. 5 hours. (Max. 15 hours.)

Special problems in Southern literature.

880T. Creative Writing Seminar. 5-15 hours.

Prerequisite: Permission of department.

Seminar in creative writing for advanced students: poetry and fiction.

885T. (CML) Problems in Literary Criticism. 5 hours.

896. Directed Reading. 5-15 hours.

Prerequisite: Permission of department.

Independent graduate study in special topics not available in scheduled courses. Topics must be approved by the instructor and the graduate faculty in English.

930. Thesis. 1-15 hours.

ENTOMOLOGY (ENT)

Preston E. Hunter

(Biological Science Building, South Campus)

Language requirement: one foreign language.

The Department of Entomology offers graduate work leading to the professional MPPPM (Master of Plant Protection and Pest Management) degree, and the MS and PhD degrees. The MPPPM is a non-thesis degree requiring 30 hours of specified graduate level course work, two units of internship, plus 30 hours of selected graduate level electives. Details of the MPPPM program may be found on page 44. The MS and PhD are research degrees requiring course work plus original research leading to a thesis or dissertation. Students holding the baccalaureate degree are normally admitted at the MS level but may petition to bypass this degree and work towards the PhD after meeting specific departmental requirements.

In addition to the faculty at the Athens campus, students may carry out research work under the direction of faculty at the Experiment Station at Griffin or at Tifton, Georgia. Facilities and opportunities for studies on applied aspects of entomological problems are emphasized at these stations. On the Athens campus faculty joint staffed with the College of Agriculture and the Institute of Ecology enable students to earn a degree in Entomology with training in related disciplines. Faculty and specialized facilities are available for student training in acarology, agricultural entomology, apiculture, aquatic entomology, insect behavior, insect biochemistry, insect endocrinology, forest entomology, insect ecology, physiology, radiation entomology, systematics, and toxicology. Facilities outside the department but available for use include electron transmission and scanning microscopes, computer facilities, forest research areas, and the U.S. Department of Agriculture and Forestry laboratories. Particularly good library facilities in Entomology are available.

Every student working toward a MS or PhD degree is required to serve as a Teaching Assistant in at least one course every two years. Students intending to pursue a career of

teaching or teaching/research should plan to acquire additional experience in teaching and teaching methods.

Departmental and research assistantships are available from the Entomology Department. Other financial aid is available through the Graduate School, but applications should be submitted to the Department of Entomology.

Students without the equivalent of a bachelor's degree in Entomology at the University of Georgia are required to make up any deficiencies during their graduate tenure.

601. Insect Taxonomy. 5 hours. Three lectures and 2 double lab periods.

Prerequisite: ENT 325.

The principles of taxonomy with practice in the classification of all orders of insects.

613AB. (PAT) Internship in Crop Protection and Pest Management. 1 hour.

See PAT 613AB.

615. Insect Physiology. 5 hours. Three lectures and 2 double lab periods.

Prerequisite: ENT 460, one course in organic chemistry and either ZOO 390, BIO 330 or BOT 380 or equivalent.

An introduction to the general physiological processes and functions of the various organ systems of insects.

640. Insect Behavior. 5 hours. Three lectures and one 3- to 4-hour lab period.

Prerequisite: ENT 325.

An evolutionary approach to the principles of behavior, with emphasis on reproduction, mimicry, insect-plant interactions and the development of sociality.

650. Agricultural Insect Ecology. 5 hours.

Three lectures and two lab periods.

Prerequisite: One senior division course in entomology.

Study of basic ecological principles as they apply to insect pest management. Emphasis is on pest population regulation and agricultural ecology.

655. Advanced Honey Bee Biology and Apiculture. 5 hours. Two lectures and three double lab periods or demonstrations.

Prerequisite: ENT 250 or equivalent, or permission of department.

A course designed to provide the student with practical experience in all phases of colony manipulation, management and disease control.

660. Insect Morphology. 5 hours. Two lectures and 3 double lab periods.

Prerequisite: ENT 325.

An introduction to insect structure and phylogeny.

674. Applied Systems of Insect Control. 5 hours. Three lectures and 2 lab periods.

Prerequisite: ENT 374 or permission of department.

Description of the major applied insect control techniques excluding insecticidal. Discussion of the advantages and limitations of these techniques including practicality, economics, environmental impact, etc. Final portion of the course will consider integrated control systems for development of a pest management program.

677. Chemistry and Toxicology of Insecticides and Fungicides. 5 hours.

Prerequisite: One course in organic chemistry and one of the following entomology courses: 374, 376, or 382.

A study of the biology, use, metabolism, residue analysis, and impact of insecticides and their alternatives in agriculture and in the environment.

680. Introductory Acarology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: One senior division course in biological sciences.

Classification, ecology and biology of the major groups of mites. (Open to graduate students only. Fall quarter of even numbered years.)

773. Entomology for Teachers. 5 hours. Two lectures and 3 double lab periods.

Prerequisite: Two elementary courses in biological science and two courses numbered 300 or above in biological science or education.

A study of insects and related forms found on land and in water; their identification and life habits, with emphasis on the use of these forms in the teaching of high school biology.

800. Entomology Seminar. 1 hour. Weekly meetings of one hour.

Prerequisite: Graduate status in a biological science.

Discussion of topics relating to entomology, both fundamental and applied, including literature reviews and discussion of recent advancements. (Winter quarter.)

816. Insect Endocrinology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CHM 261, ENT 415/615 or permission of department.

A study of metabolism and physiological regulatory mechanisms in insects. Laboratory practice in microsurgical techniques for extirpation and transplantation of endocrine tissues. (Winter quarter of odd numbered years.)

871. Taxonomy of Insect Larvae. 5 hours. Two lectures and three double lab periods.

Prerequisite: Any one of the following: ENT 374 or 376 or 460/660 and one additional senior division course in biological science.

A study of the classification, biology, and phylogenetic and economic significance of insect larvae. (Fall quarter of even numbered years.)

882. Entomophagous Arthropods. 5 hours.

Prerequisite: ENT 325, 450/650 or BIO 350 or permission of department.

A study of the interactions of arthropod parasitoids and predators in natural population systems. Basic and subsidiary components of parasitism and predation, parasitoid-prey and predator-prey systems, systematics, taxonomy, morphology, and biology are the major subjects of consideration. (Spring quarter of odd numbered years.)

900. Problems in Entomology. 1-5 hours.

Prerequisite: Two senior division courses in entomology.

In this course students are allowed to work intensively on approved problems in entomology.

930. Thesis. 1-15 hours.

ENVIRONMENTAL DESIGN

Darrel G. Morrison
(Caldwell Hall, North Campus)

In the School of Environmental Design, we seek an enlightened, responsible and creative approach to landscape architecture and land use planning. Programs are designed to make students aware of the need to understand their environment and to introduce them to environmental studies, enabling them to approach the design process with an understanding and a rationale. Through its series of programs in design, education and research, the school serves as a regional center for environmental planning and design in the United States.

The prospective student will find that the school is well located to serve as a regional center. In addition to the many facilities and courses offered by the school and university at large, the special facilities of the Institute of Ecology, Institute of Natural Resources, and Institute of Community and Area Development are available as additional educational and research resources.

The Master of Landscape Architecture degree requires 75 credit hours' of study beyond the baccalaureate degree.

The structure of the program is based on four design studios. The first introduces a professional approach to site design from initiation to implementation. (Students with professional experience may substitute an elective course.) The second and third studios examine the theoretical bases for design decisions, drawing on concepts in environmental psychology and plant ecology. The fourth studio presents an opportunity to specialize in either landscape preservation or environmental issues including mineland reclamation and coastal zone problems.

The studios are supported by required courses in landscape construction, city planning and natural resource law. The specializations are preceded by elective courses within the school in the techniques of preservation planning or environmental analysis. Other electives may be selected from a short list of

relevant courses in other departments. The school offers additional elective courses in regional recreation planning and civic design based on urban ecology.

Research is coordinated into areas where the school can make a significant contribution. A project may be pursued individually or as part of a team. In this program research is not regarded as an end in itself but as a service to design. A design thesis serves as a final exam: a design project is executed to synthesize design methodology, theories from environmental psychology and ecology, technical studies and relevant research.

Prerequisites: Applicants with a BLA may be admitted directly into the MLA program. Applications are also welcomed from those in related fields such as environmental science, horticulture and architecture, or those with a demonstrable interest in the field. These applicants are required to take prerequisite courses in the undergraduate sequence up to a maximum of 60 hours. While it is not possible to acquire all the skills appropriate to a BLA in the course of this prerequisite sequence, the aim is to convey the fundamentals of theory and practice. Skills will continue to mature in the graduate program, when the student can also apply the expertise of his first degree in the design studios and research project.

HISTORIC PRESERVATION PROGRAMS

Within the School of Environmental Design, there are two degree programs related to historic preservation. For students interested in the application of their historic preservation interests through the profession of landscape architecture, there is the preservation option with the MLA program. In addition, the Master of Historic Preservation (MHP) program, requiring 90 credit hours, offers students from diverse academic backgrounds the opportunity to prepare for a wide range of careers in the conservation and management of historic resources in both the built and natural environments.

JOINT PROGRAM IN CITY PLANNING

The University of Georgia Graduate School and the Georgia Institute of Technology offer a joint two-year program for eligible graduate students leading to the simultaneous award of two degrees—Master of City Planning by

Georgia Institute of Technology and Master of Landscape Architecture by The University of Georgia.

This joint program serves the rapidly growing needs of planning agencies, planning consultants and others for professionals who have competence in city planning and large scale urban design. For information on this program, interested candidates should write to the Coordinator, Graduate Studies, School of Environmental Design, University of Georgia.

ENVIRONMENTAL DESIGN (ENV)

600. Man and the Physical Environment. 5 hours.

Prerequisite: Upper division standing or permission of school.

A survey course for non-majors which investigates the natural and man-made forces affecting environmental quality and change. Developed to prepare the student for a participating role in environmental issues. (Not open to landscape architecture majors.)

618ABC. Special Studies and Projects. 2-5 hours. (Max. 15 hours.)

Prerequisite: Permission of school.

Special study or project which would provide an opportunity to pursue research interests or significant projects in environmental design.

676. Restoration and Preservation of Historic Buildings and Sites. 5 hours.

Survey of European and American historic restoration and preservation theory, its evolution and practice, and its relationship to the concept of environmental quality.

HISTORIC PRESERVATION (HP)

650. Preservation Law. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

An analysis of significant national, state, and local preservation law, the legal foundation for protection of historic resources, and related preservation case law.

682ABCDE. Historic Preservation Colloquium. 1 hour each. (Max. 5 hours all suffixes.)

Prerequisite: ENV 476/676 for 682BCDE and permission of school.

Corequisite: ENV 476/676 for 682A.

Investigation of special topics in historic preservation. Topics will vary from quarter to quarter.

A. Preservation practice.

B. Neighborhood conservation.

C. Small town conservation.

D. Preservation technology.

E. Fund raising for historic preservation.

705. Historic Preservation Planning. 5 hours.

Prerequisite: ENV 476/676.

Application of the theory and techniques of preservation planning. Emphasis is placed on the development of preservation plans at the site specific, community, and regional levels.

752. Evolution of the American Landscape. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

An introduction to the study of American Landscape History, from its colonial beginnings to the present day.

753. Evolution of American Architecture. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

A survey of structures in the landscape and reasons for their forms including function, materials available, tools, technology, prototypes, climate, site, and stylistic influences. (U.S. only.)

772. Cultural Resource Assessment. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

Identification of cultural resources; methods of collecting, recording, processing, and analyzing survey material.

780. Rural Preservation. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

A survey and analysis of the evaluation of the rural historic landscape, its aesthetic values, preservation problems, and legal and financial resources available for landscape preservation.

LANDSCAPE ARCHITECTURE (LAR)

610. Professional Internship. 5 hours.

Prerequisite: Permission of school.

Provides credit for professional office experience under the supervision of registered landscape architects or related practitioners (architects, engineers, planners). The experience may involve site design, planning or related research. A minimum of two months full-time supervised employment for five (5) credit hours.

653. City Planning. 5 hours.

Prerequisite: LAR 372 or permission of school.
Background course in city planning covering the history and bibliography of the subject and introducing the students to modern trends in planning. Designed as a foundation for further study of professional planning.

701. Landscape Design 1. 5 hours.

Prerequisite: Permission of school.
The professional procedures for the design and execution of a small scale project. Individually or in groups of two, students select a development project for which the entire landscape contract documents can be completed in one term.

702. Landscape Design 2. 5 hours.

Prerequisite: Permission of school.
The application of the concepts of environmental psychology in the design of urban spaces.

703. Landscape Design 3. 5 hours.

Prerequisite: Permission of school.
The application of the concepts of plant ecology in landscape design and management.

704. Environmental Issues. 5 hours.

Prerequisite: LAR 523/723 or permission of school.
The application of ecological concepts and the techniques of environmental analysis to site planning problems associated with selected issues such as mineland reclamation and coastal zone management.

723. Environmental Analysis. 5 hours.

Prerequisite: LAR 323.
Techniques for the survey and analysis of natural processes at the site planning scale with an emphasis on field studies and computer applications.

725. Regional Recreation Planning. 5 hours.
Three 1-hour lectures and two 1-hour lab periods.

Prerequisite: REC 384.

An approach to regional scale recreation planning. Studies of existing regional land use recreation programs, their significance and implications to individual park planning. A look at space requirements, policies and financial considerations in the design profession.

754. Urban Design. 5 hours.

Prerequisite: LAR 453/653 or permission of school.

The study of techniques for the design and improvement of the urban environment: the application of the concepts of urban ecology in the planning of new communities and the revitalization of existing city districts.

765. Advanced Landscape Construction. 5 hours.

Prerequisite: LAR 350 and 357.
The study of construction and engineering requirements involved in subdivision and other large scale landscape design projects, including land drainage, sewage disposal, road design, cost estimating and specification writing.

801AB. Seminar in Landscape Architecture. 1 hour each.

Prerequisite: A minimum of 10 quarter hours of graduate study or permission of school.
The discussion of current issues, research and new developments in the field.

802AB. Research in Environmental Design. 5 hours each. (Max. 10 hours.)

Prerequisite: LAR 801A.
Selected research projects in directions defined by the school's research program.

930. Thesis. 5-50 hours.

FOOD SCIENCE (FS)

James A. Christian
(Food Science Building, South Campus)

Doctoral language requirement; one foreign language.

Graduate programs leading to the degree of Master of Science in food science and to the Doctor of Philosophy in food science are offered.

Since the application of science and engineering is important in properly selecting, preparing, processing, packaging, distributing and utilizing foods, students selecting this field must be able to delve into problems involving chemistry, microbiology, engineering, and other sciences as well as in the more applied problems concerned with food production, stability, or toxicology. Individuals whose baccalaureate degree is in other fields of science often enter this graduate program because of the important challenges of supplying food to mankind, and the opportunities that this field provides to those with advanced degrees. Programs of study are worked out for each individual to best utilize his prior training and his career objectives. The food science department occupies one of the buildings in The University of Georgia science complex, is well equipped with modern instrumentation and other facilities for graduate research, and its staff is composed of scientists trained in several of the fundamental disciplines as well as in food science or technology.

Financial assistance is available through (1) graduate teaching or research assistantships; (2) competitive or sponsored fellowships and industrial assistantships. Prospective students are encouraged to inquire about financial aid before entering Graduate School by contacting the food science department.

Courses in dairy manufacturing are listed under the heading "Dairy Science."

607. (MIB) Microbiology of Foods. 5 hours.

Two lectures and three 2-hour lab periods.

Prerequisite: MIB 350

Microorganisms in natural and processed foods; their origin, nature, and effects on foods; enumeration; relationship to health.

609. Community and Home Food Preservation. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: At least two senior division courses in appropriate departments as determined by the instructor.

The principles of food preservation will be studied with reference to present practices and possible improvement in home and community methods. The effect of various methods of food preservation will be evaluated in terms of public health, food spoilage, food quality, and the nutritional value of the foods.

611. Food Engineering Fundamentals. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: FS 301, 367 or 409/609 or permission of department.

Mass and energy balance, fluid flow, heat transfer, and refrigeration in food plant operations. The course will cover the theory, calculations and design practices, and equipment used on these operations, as well as the physical, chemical, and microbial changes that can occur in foods in processes employing these operations.

612. Food Engineering Fundamentals. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: FS 411/611 or permission of department.

Continuation of FS 411/611. Covers phase equilibria in foods, evaporation de-aeration, drying, filtration, size reduction, mechanical separation processes, agglomeration, and process control.

613. Food Process Development. 5 hours. One lecture and two 3-hour lab periods per week.

Prerequisite: FS 411/611 and 412/612.

The principles of food process design and development, identification of critical parameters in food processing operations, automatic control systems, process optimization, principles of scaling-up from bench to pilot plant to industrial scale, equipment selection and specification, and processing cost estimate.

614. Food Chemistry. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: CHM 240 or 340, FS 301, 367, or 409/609.

A study of the chemical and physical properties of foods.

619. Nutritional Quality of Food and the Effect of Technology. 5 hours.

Prerequisite: FS 414/614, BCH/BIO 301, or permission of department.

A study of the nutritional properties of food and the effects of modern technology on nutritional quality.

621. (MIB) Environmental Microbiology. 5 hours. Two lectures and three 2-hour lab periods.

Prerequisite: MIB 350.

The role of environment on organisms; agents to retard, inhibit, or stimulate bacteria and their mode of action; dynamics of physical, physiological and chemical factors affecting bacteria and their resistance to antimicrobial agents; isolation of anaerobes and factors affecting sporogenesis, dormancy spore germination and differentiation.

622. Instrumental Methods of Food Analysis. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CHM 240.

Spectrophotometric, colorimetric, chromatographic, and potentiometric methods of analysis as applied to food will be studied. Emphasis will be placed upon correlation and interpretation of results.

623. Food Packaging and Quality Control. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MAT 101, MIB 350, FS 301 or 367.

The physical, chemical, microbiological and economic problems related to the use of metal, glass, paper, flexible films and other packaging materials in the food industry. Objectives of statistical quality control, experimental sampling approach to quality control, types of control charts, acceptance sampling and production control.

624. Advanced Science of Meat, Fish, and Poultry Processing. 5 hours. Three lectures and three 2-hour lab periods.

Prerequisite: FS 407/607, 411/611, 414/614.

Advanced theoretical and applied concepts relating to physical, chemical, enzymatic, and microbial changes occurring in meat, fish and poultry products during processing. These will be studied with particular reference to canning, curing, freezing, refrigeration, spoilage of fresh and processed flesh products, and the use and development of by-products.

625. Governmental Regulation of Food Safety and Quality. 3 hours.

Prerequisite: Permission of department.

Role of mandatory and optional food regula-

tions exercised by state, federal and international agencies on food quality, safety, wholesomeness and nutrition.

626. (FDN) Sensory Principles and Practices. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Permission of department.

The sensory properties of foods, methods for the evaluation of color, flavor, texture, appearance and other qualities, the relations of sensory qualities to chemical or physical attributes, and experimental design and the analysis of data will be studied.

800. Industrial Fermentation. 5 hours. Three lectures and two 3-hours lab periods.

Prerequisite: MIB 350 and BCH 401/601 or 801.

The ketogenic fermentation process, production of organic acids, enzymes, vitamins, antibiotics will be studied. Emphasis will be placed on theoretical or fundamental reactions involved and conditions affecting fermentative efficiency.

802. Food Lipids. 3 hours. Two lectures and one 3-hour lab period.

Prerequisite: FS 414/614, BCH 401/601 or 801.

A study of the structure, composition, properties, preservation, deterioration, analysis and nutritional qualities of lipids in foods.

805. Flavor Chemistry and Evaluation. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: STA 421/621, CHM 341 or permission of department.

Sensory methods of evaluating flavor and physical or chemical methods of measuring flavor components; the flavor characteristics of various chemicals, especially as influenced by concentration and interaction with other compounds; flavor formulation; and the stability of flavor substances during processing and storage will be studied.

807. Food Colorants. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CHM 240.

The chemical, biochemical and nutritive properties of natural and artificial food colorants are studied. methods used for their isolation and study are demonstrated.

808. Food Toxicology. 3 hours.

Prerequisite: FS 407/607, CHM 240.

Principles and problems in evaluating the wholesomeness, and safety of foods, food components, and intentional or incidental additives. Consideration of selective toxicity, detoxication mechanisms, structure and biological activity; basic concepts and tech-

niques of safety evaluation, interpretation of biological data.

809. Colloidal and Rheological Properties of Food Systems. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MAT 253, CHM 241, and FS 411/611.

Physical and chemical properties of food colloids with emphasis on emulsions, gels and sols. Introduction to rheology, theory of instrumental evaluation of elastics, plastic, viscous and viscoelastical properties of biological solids, colloids and fluids.

815. Food Science Seminar. 1 hour.

Prerequisite: Any two senior division courses in food science.

Discussion of selected topics in food science.

819, 820. Methods in Food Science. 5 hours each.

Selected problems associated with food science will be studied to develop greater facility in the application of scientific methods to the solution of problems.

830. (PHR) Radiation Principles. 5 hours. Two lectures and two 4-hour lab periods.

Prerequisite: BCH 401/601 or equivalent.

Principles and techniques of radiochemistry and radiobiology.

930. Thesis. 1-15 hours.

FOREST RESOURCES (FRS)

Leon A. Hargreaves, Jr.

(Forest Resources Building, South Campus)

Doctoral language requirement: one foreign language.

Graduate study opportunities in the School of Forest Resources encompass numerous disciplines needed to understand and effectively manage renewable natural resources. Graduate training and research are conducted in the general areas of forest biology and silviculture, forest business management, forest biometrics and management, forest soils and water resources, forest policy, planning and administration, wildlife and fisheries biology, and wood technology.

Excellent facilities are available for graduate study and research. The School of Forest Resources is housed in a complex of three buildings, one of which is devoted entirely to graduate research facilities. In addition, two modern U.S. Forest Service research laboratories, located adjacent to the School, provide excellent opportunities for cooperative research in silviculture and wood utilization. The Department of the Interior, Bureau of Sport Fisheries and Wildlife, also maintains a Cooperative Fishery and Cooperative Wildlife Unit in cooperation with the School of Forest Resources, as well as a Migratory Bird Unit and an Environmental Contaminant Evaluation Field Station.

Students with baccalaureate degrees in related fields may be accepted for graduate study in the School of Forest Resources if qualified.

600. Advanced Forest Soils. 5 hours. Three 2-hour lecture-lab periods.

Prerequisite: FRS 310 and AGY 305.

Morphological, physical and chemical properties of soils in relation to growth of forest trees; classification of forest profiles and site index; response to harvesting and site preparation treatments, drainage and fertilization. Appraisal of soil conditions on forest properties.

602. Forest Tree Improvement. 4 hours. Three lectures and two weekend field trips. Methods of selection, breeding and propagation; heritability of traits, geographical variation patterns of forest trees.

603. Regional Silviculture. 5 hours. Prerequisite: FRS 303 or equivalent; or permission of school.

Identification of the major forest regions of the United States and discussion of their silvicultural management. Advanced hardwood and pine silviculture of the Southeastern region will be emphasized.

611. Watershed Hydrology 5 hours.

Prerequisite: FRS 311 or equivalent; MAT 254 or permission of school.

General hydrology as based on the hydrologic cycle with emphasis on the role of soil, vegetation, physiography and the microclimate on processes of precipitation, runoff, erosion and land forming. Problems of measurement of stream-flow, ground-water, soil moisture, precipitation, and engineering applications are included.

630. Forest Range Management. 3 hours.

Prerequisite: FRS 302.

Principles of range management involving the use by domestic animals and wildlife of forest range as a resource; improvement of forest range; ecology of forest range plants.

631. (Zoo) Limnology. 5 hours. Three lectures, two 2-hour lab periods and field trips.

Prerequisite: FRS 330.

Consideration will be given to common organisms found in aquatic habitats associated with forest lands and to the various factors which influence them.

636. Fish Ecology. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: Permission of school.

Discussion of biological, physical and chemical factors affecting fishes and fish populations with emphasis on growth, feeding, reproduction, movements and migrations, tolerance of adverse conditions, and species interactions. Management implications will also be considered.

637. Fish Physiology. 5 hours. Three 1-hour lectures and two 3-hour lab periods.

Prerequisite: ZOO 226 or permission of school.

An overall review of basic fish physiology with an emphasis on the effects of various environmental stresses on physiological functions of fish.

640. Forest Management for Recreation. 3 hours.

Prerequisite: FRS 303 and 340, or permission of school.

Method of manipulating forest stands and understory vegetation for forest recreation and the maintenance of aesthetic quality.

650. Timber Characteristics and Utilization. 4 hours.

Prerequisite: FRS 350.

Study of wood products, their manufacture and the influence of their production on forestry practices.

652. Advanced Wood Anatomy. 3 hours.

Prerequisite: FRS 321 or BOT 423/623.

The recognition and identification of woody tissues and the anatomical elements that make up these tissues; their function; the microstructure within these elements; and the interpretation of woody elements structure from electron micrographs.

654. Advanced Physical and Mechanical Properties of Wood. 5 hours.

Prerequisite: FRS 350 or equivalent.

Advanced study of the physical and mechanical properties of wood, including how they relate to the chemical and anatomical composition of wood and wood products.

655. Advanced Wood Processing. 5 hours.

Prerequisites: FRS 350 and 654.

Advanced study of wood processing unit operations (machining, drying, fastening, finishing, treating) emphasizing the relationship between wood characteristics and successful processing.

656. Theory and Practice of Adhesive Bonding of Wood. 5 hours.

Prerequisite: FRS 654 or equivalent.

A survey of basic mechanisms of adhesion and how each relates to wood gluing, followed by in-depth study of principles and practices relating to successful wood gluing.

661. Forest Mensuration. 3 hours. Two lectures and one 2-hour lab period.

Prerequisite: FRS 363, or permission of school.

Methods for estimation of timber products. Emphasis on sample survey applications in timber management and on growth and yield estimation.

662. Timber Management. 4 hours.

Prerequisite: FRS 461/661.

Organization and management of forest properties for the production of commercial forest products.

664. Forest Inventory. 5 hours.

Prerequisite: FRS 362.

Corequisite: FRS 461/661.

Planning forest inventories and the comparison of various equal and unequal probability sampling concepts are emphasized. Permanent and temporary forest sampling procedures are compared. Current stand and future growth estimation principles are included.

671. Quantitative Decision Methods for Forest Resources Management. 5 hours. Four lectures and one 2-hour practicum.

Prerequisite: Permission of school.

Principles of forest resources management and management decision-making. Particular emphasis on optimization procedures and financial analysis.

672. Forest Resources Management and Economics. 5 hours. Four lectures and one practicum period.

Prerequisite: FRS 471/671.

Managerial decisions and resource use planning, including economic analysis of alternatives, choices of optimal and preferred strategies, and implementation in conflicting use situations. Resource history and policy sufficient for appropriate consideration in formulation of management objectives and strategies in both the private and public sectors.

673. Senior Project in Forest Resources Management. 5 hours. Three lectures and two practicum periods.

Prerequisite: FRS 472/672.

Advanced problems in forest resources management integrating all courses to date.

680. Forest Resources Policy. 3 hours.

Prerequisite: POL 101.

Forest policy as a process, establishing forestry agendas, political decision models, political institutions and interest groups, policy in organizations, current issues.

681. Forest Resources Law. 5 hours.

A study of the legal aspects of forest resources administration. This course is in no sense designed, nor should it be inferred, as being a course in instruction in law as would be taught in a school of law. Not open to Law School students.

683. Forest land use Planning. 5 hours.

The overall use and planning of forest lands and resources consistent with technological, legal, social, economic and political constraints.

690. Informational Methods in Forest Resources. 3 hours.

Procedures and techniques of using various media essential to disseminating forest resource information to the public.

700. Artificial Regeneration. 5 hours. Three 2-hour lecture-lab periods.

Prerequisite: FRS 303.

Fundamentals and practices of artificial regeneration. Propagation; seed development, germination, technology, and certification; nursery management; site preparation, direct seeding; planting; and development, yield, and financial aspects of plantations.

730. Techniques in Wildlife Population Analysis and Management. 5 hours. Three lectures, two 3-hour lab periods, and field trips.

Prerequisite: Permission of school.

Field and laboratory methods commonly used by professional wildlife ecologists to analyze and manipulate animal populations.

731. Advanced Principles of Wildlife Management. 5 hours.

Prerequisite: FRS 530/730.

Application of the principles of animal and plant ecology to the biological basis of wildlife management and its coordination with other uses in terrestrial and aquatic habitats.

735. Wildlife Habitat Management. 5 hours.

Three lectures and two 3-hour lab periods.

Extended field trips will be required.

Prerequisite: Permission of school.

A field course dealing with ecology of wildlife habitats and their manipulation in relation to other land uses.

736. Fishery Management Techniques. 5 hours.

Prerequisite: Permission of school.

Principles and methods of managing fishery resources. Topics include estimation of population numbers, mortality and survival rates, production and yield, and effectiveness of various management techniques in natural and artificial waters.

738. Fish Culture. 5 hours. Three lectures, one 2-hour lab period, and field trips.

Prerequisite: ZOO 226 and permission of school.

Study of extensive and intensive culture of fishes with emphasis on methods and species utilized in the eastern United States.

740. Forest Recreation Area Development. 5 hours.

Prerequisite: FRS 340.

Principles of recreation area planning, site selection, and development.

741. Wilderness Management. 4 hours.

Prerequisite: FRS 340 or permission of school.

Readings and discussion of the origins, philosophy, and values of the wilderness concept, and its associated issues and arguments. Wilderness management-scope, objectives, and options available within legal, practical, and philosophical limits. Field study and development of a management plan.

762. Quantitative Models for Timber Management Decisions. 5 hours.

Prerequisite: FRS 471/671.

Corequisite: FRS 472/672.

An intensive coverage of the use of growth and yield models, inventory data systems, and optimization models in timber management planning. Current optimization and simulation models for industrial forest management and public forested land management are used by the student for assigned class projects.

771. Advanced Forest Economics. 4 hours.

Prerequisite: ECN 106.

Corequisite: FRS 471/671.

Microeconomic and production economics theory with forest resources applications, financial analysis of investments, social benefit-cost analysis.

772. Forest Harvesting. 4 hours.

Prerequisite: FRS 303.

Equipment, methods and transportation; cost analysis.

773. Economics and Principles of Management of Southern Forests. 5 hours.

Prerequisite: Permission of school.

Study of economic importance and opportunities of forest lands and associated resources; renewable vs. non-renewable resources; principles of management of timber, water, wildlife, recreational and related resources; and introduction to public, private and industrial forest land management practices. A bibliography and additional readings will be required of graduate students. (Not open to forestry majors.)

774. Operational Planning — Wood Fiber Supply. 5 hours.

Prerequisite: FRS 365.

This course will bring together the various forestry activities of a typical industrial forestry enterprise into an annual operating plan. Ways of measuring progress throughout the

year and capital budgeting procedures will also be taught.

775. Procurement and Management of Wood Fiber Supply. 4 hours.

Management of the wood fiber supply, program management functions, legal aspects and analysis of current issues in raw material management.

778. Timberland Accounting, Finance and Taxation. 4 hours.

Prerequisite: ACC 799F.

Corequisite: FIN 800.

An analysis of the accounting, finance and tax aspects of acquiring, owning and disposing of timberland.

779. Forest Industry Financial Structure. 5 hours.

Prerequisite: FRS 778.

Study of the financial structure of the companies in the forest products industry. This will be primarily a project course. The students will prepare written and oral financial analysis reports on companies in the forest products industry.

780. Operations Analysis in Forest Resources. 5 hours.

Corequisite: FRS 471/671.

Applications of management science techniques to forest resources administration. Modern data processing will be utilized to facilitate solution of current problems.

782. Natural Resources Law for Managers and Administrators. 5 hours.

Introduces future natural resource managers to statutory and case law and to important regulations concerning resource conservation, allocation, and development, and acquaints them with modern systems-sensitive regulatory programs affecting natural resource administration. Inquires into the division and nature of the functions of the judicial and executive branches of government. Not open to Law School students.

783. Forest Resources Management Decisions. 5 hours.

Prerequisite: Permission of school.

An introduction to principles of resources management decisions with particular emphasis on quantitative methods. Analyses will emphasize choice of optimal and preferred strategies in conflicting use situations.

785. Forest Policy Issues. 3 hours.

Prerequisite: POL 101 or FRS 480/680.

The course will familiarize students with forestry issues and political processes. A general

framework for analyzing current issues will be developed and specific issues will be analyzed each year.

798A. Fishery Management Problems. 1-15 hours.

Intensive study of an aspect of forest resources management.

798B. Timber Management and Utilization Problems. 1-15 hours.

Intensive study of an aspect of forest resources management.

798C. Water Resources Problems. 1-15 hours.

Intensive study of an aspect of forest resources management.

798D. Planning and Administration Problems. 1-15 hours.

Intensive study of an aspect of forest resources management.

800. Forest Resources Seminar. 1 hour. (Max. 6 hours.)

Topics, both fundamental and applied, relating to multiple-use management of forests and wild land, including literature review and current advances.

802. Tree Growth and Development. 5 hours.

Prerequisite: FRS 302, or BOT 380 or 483/683, or HOR 308.

Special topics in structure and function of woody plants with emphasis on growth of forest trees. Patterns of primary and secondary growth, growth and form, transport in xylem and phloem, dormancy and reproduction.

811. Hydrologic Modeling. 5 hours.

Prerequisite: FRS 411/611 or permission of school.

The application of advanced computer and hydrologic techniques to the solution of hydrologic synthesis and simulation problems.

820. Scientific Research for Multiple Resource Decisions. 3 hours.

Prerequisite: Permission of school.

The evolution of science and research related to forest and wildland resource management. An analysis of recent trends in public attitudes toward forest resource research support; the contribution of research to forest land management; the importance of the problem analysis. Required of all Forest Resources M.S. and Ph.D. candidates.

830. Fisheries and Wildlife Seminar. 1 hour. (Max. 6 hours.)

Weekly meetings reviewing recent advances in fishery and wildlife research and management.

846. Quantitative Models of Fish and Wildlife Populations. 5 hours.

Prerequisite: MAT 254 and STA 421/621.

Quantitative models of exploited populations; analytical approaches to population management, biological and economic yields; estimates of population parameters.

847. Mathematical Programming. 3 hours.

Prerequisite: MAT 477/677.

Introduction to mathematical programming with emphasis on linear programming. Theory of simplex method and revised simplex method are developed in detail. Students are introduced to computer algorithms that facilitate solution of large scale linear programming problems. IBM mathematical programming language is covered. Formulation of linear programming models and interpretation of results are stressed. Various post-optimal procedures are discussed.

848. Quantitative Methods in Forest Management. 5 hours.

Prerequisite: MAT 254, STA 422/622, CSC 500/700.

The application of statistical procedures and computer technology to problems in forest mensuration and forest management planning. Emphasis on growth and yield prediction, management information systems and quantitative decision-making procedures.

849. Sampling Techniques for Biological Populations. 5 hours.

Prerequisite: STA 424/624.

Application of statistical sampling procedures to problems of estimation in populations of interest to the forest resource manager.

850. (PAR) Diseases of Wildlife. 5 hours.

See PAR 850.

851. (PAR) Diseases of Wildlife. 5 hours.

See PAR 851.

855. The Chemistry and Synthesis of Wood Adhesives. 5 hours.

Prerequisite: FRS 656, CHM 241/241L or their equivalents.

Detailed study of synthetic resins including their chemistry, synthesis procedures, and their chemical and physical properties as related to wood adhesive mix formulations.

856. Advanced Concepts in Plywood Production. 5 hours.

Prerequisite: FRS 656 or equivalent.

History of veneer and plywood (including advantages of plywood) followed by a study of the types and grades of plywood made with

emphasis on process technology and material variables affecting successful plywood production.

857. Advanced Concepts in Particle- and Fiber-board Production. 5 hours.

Prerequisite: FRS 656 or equivalent.

Overview of panel product universe and detailed study of process and material variables for particleboard, medium density fiberboard, hardboard, insulation board and excelsior-cement board.

873. Strategic Planning — Wood Fiber Supply. 5 hours.

Prerequisite: FRS 574/774.

Will teach prospective wood supply managers to identify and analyze critical wood supply issues and to develop appropriate strategies of dealing with them.

878. Timberland Financing Alternatives. 5 hours.

Prerequisite: FRS 779.

A study of the alternatives to ownership for controlling the access to wood fibers. Leases, long-term timber cutting contracts, and other legal instruments will be evaluated as to their financial and operational advantages and disadvantages compared to timberland ownership.

898A. Fishery Management Problems. 1-15 hours.

Intensive study of an aspect of forest resources management at the doctoral level.

898B. Timber Management and Utilization Problems. 1-15 hours.

Intensive study of an aspect of forest resources management at the doctoral level.

898C. Water Resources Problems. 1-15 hours.

Intensive study of an aspect of forest resources management at the doctoral level.

898D. Planning and Administration Problems. 1-15 hours.

Intensive study of an aspect of forest resources management at the doctoral level.

898E. Wildlife Management Problems. 1-15 hours.

Intensive study of an aspect of forest resources management at the doctoral level.

921. Applied Research in Forest Resources. 1-15 hours.

Designed to provide individual guidance in the development of a significant project related to the student's major field of study. A written report presented in a format meeting professional standards must be submitted and subjected to review by an appropriate faculty committee.

930. Thesis. 1-15 hours.

GEOGRAPHY (GGY)

James S. Fisher

(Geography-Geology-Speech Building, South Campus)

The MA and PhD degrees are offered with concentration in various areas of physical, human, and regional geography, as well as in geographic techniques. The MA degree requires 10 core hours and 34 elective hours. While the PhD has no set hour requirement, certain core courses are necessary. For the PhD, the Department of Geography requires either a reading knowledge of two languages, one of which will be either French, German or Russian; or, an advanced knowledge (including conversational ability) in one language; or, reading knowledge of one language plus an advanced knowledge of an acceptable, alternative research tool, (statistics, mathematics, computer programming). For the MA, reading knowledge of one foreign language or an acceptable alternative research tool is required.

A modern, air-conditioned building provides well equipped teaching and research accommodations including cartographic, climatic, photo interpretation, remote sensing, and photogrammetric equipment and laboratories. The department has a broad range of computer facilities such as teletype and video display, remote terminals, small plotters, key punch, interactive computer graphics systems, program packages for the analysis and classification of Landsat image data, program library, and many kinds of calculating machines. Photographic and darkroom facilities, individual student carrels, research rooms, a rooftop weather station, field vehicles and equipment combine to make the department a stimulating place in which to study. Located in the same building is the Cartographic Services Laboratory which assists faculty and student research efforts.

The University's library holdings, particularly in geography, are extensive. Approximately 290,000 sheet maps and over 180,000 aerial photos are maintained in the nearby Science Library. The Computer Center operates one of the largest facilities in the U.S., including the IBM 3081-D, two IBM 370/158AP/s, a Cyber

750, a Cyber 825, a Veratec electrostatic plotter, as well as several remote sites on campus consisting of interactive terminals, remote printers, and various kinds of mini and microcomputer facilities.

HUMAN AND REGIONAL GEOGRAPHY

612. Geography of Development. 5 hours.

Prerequisite: Ten hours in geography or equivalent background in related disciplines. An examination of the geographical aspects of development ranging from consideration of the neighborhood to large regions and countries. The spatial characteristics of developmental processes are viewed at the conceptual level and reinforced by selected field projects.

613. Biogeography. 5 hours.

Prerequisite: GGY 122 or permission of department.

Patterns of plant and animal distribution in the contemporary landscape are stressed, including detailed treatment of species ranges, diversity relations, factors influencing the geography of plant and animal assemblages, and gradient analysis techniques. Consideration of successional theory, disturbance, and human-biota interactions promote awareness of landscape dynamics. Weekend field trips and field exercises required.

626. Field Methods in Human Geography. 4 hours.

Prerequisite: 15 hours in geography courses numbered above 200 including GGY 350.

Introduction to methods used in human geography to identify, classify, measure and record basic field information; includes training in land use classification, mapping and preliminary analysis. Methods include reconnaissance, tabulation, field mapping, counting, interviewing, coding and card-punching. Data are carried through preliminary analysis, and findings reported in oral, written, map, and printout form.

636. Geography of the South. 5 hours.

Prerequisite: Ten hours in courses from one of the following departments: geography, history, or economics.

Geographical appraisal of the southeastern states, including physical and human resources, settlement and population, agriculture, the extractive industries, transportation and present urban settlements. Current progress and major problems in southeastern development.

638. Historical Geography of Eastern North America to 1783. 5 hours.

Prerequisite: Ten hours in history or geography, or an equivalent background in anthropology or archeology.

Evolution of settlement systems and their distributions in pre-Revolutionary North America; modifications in natural landscapes and resources as the colonial cultural landscapes developed. Comparative geography of the early regions of eastern North America.

639. Historical Geography of Eastern North America 1783-1860. 5 hours.

Prerequisite: Ten hours in history or geography, or an equivalent background in anthropology or archeology.

Expansion settlement systems and their distribution into the trans-Appalachian regions during the early 19th Century. Comparative geography at mid-19th Century of the regions of eastern North America.

641. Caribbean America. 5 hours.

Prerequisite: Ten hours in geography, or an equivalent background in Spanish, history, economics, or anthropology.

A regional analysis of the Caribbean area with emphasis upon the physical, cultural and economic factors affecting man's use of his resources.

642. South America. 5 hours.

Prerequisite: Ten hours in geography or an equivalent background in either Spanish or history.

A regional analysis of the geography of equatorial and southern South America including physical, cultural, and economic characteristics of the several regions. Stress upon prospects for expansion of settlement, developments of resources and growth of industries.

644. Europe and the Mediterranean. 5 hours.

Prerequisite: Ten hours in geography or in history, political science, or modern languages.

A regional analysis of Europe, exclusive of the Soviet Union, designed to reveal the unique cultural, physical and economic character and problems of the several European nations.

646. Geography of the Soviet Union. 5 hours.

Prerequisite: Ten hours in geography or an equivalent background in history, political science, or economics.

A systematic and regional analysis of the industrial, agricultural, urban, population and physical geography of the USSR. Designed to evaluate, within the framework of the state's

ideology and centrally controlled planned economy, its spatial organization and consequent economic and political strengths and weaknesses.

647. Geography of China. 5 hours.

Prerequisite: Ten hours of geography or related social sciences or area studies.

A systematic and regional analysis of the physical and human geography of contemporary China. Emphasis is on modernization and development of agriculture, industry, and transportation within the context of China's resource base and large population.

648. Geography of East and Southeast Asia. 5 hours.

Prerequisite: Ten hours of geography or ten hours in the culture or language of the region. A systematic and regional analysis of the physical and human geography of East and Southeast Asia (excluding China, see GGY 447/647). Major focus on resources, land utilization, population, characteristics and distributions as they relate to economic and political problems. Emphasis is on Japan, Korea, Indonesia, Philippines, and IndoChina.

653. (ANT) Urbanization in Developing Countries. 5 hours.

See ANT 653.

659. Urban Geography. 5 hours.

Prerequisite: Two courses from GGY 350, 358, or ECN 133.

Analysis of urban land occupance and its morphological-functional aspects. Introductory location theory in urban areas. Procedures in geographical analysis of agglomerated settlements.

660. Industrial Geography. 5 hours.

Theories in industrial location. Detailed locational analysis of selected manufacturing industries. Regional treatment of the spatial structure of North American manufacturing.

661. North American Rural Land Use. 5 hours.

Prerequisite: Ten hours from GGY 350, 358, 459/659, 460/660 or ten hours in 300-level courses from economics, botany or agronomy approved by instructor.

Regional analysis of climate, soils, landform bases of American agriculture. Origins and dispersals of cultivated plants and livestock; American systems of rural land use and settlement in their regional settings. Contemporary problems in land use and its geographical analysis.

663. Geography of Transportation. 5 hours.

Prerequisite: GGY 358 or MKT 559.

Survey of historical, engineering and economic aspects of North American transport. Influence of modal characteristics on economic phenomena. Survey of regional commodity movements, at various scales. Principles and theories explaining role of transportation in regional planning, and in location of economic and political phenomena.

668. Urban Transportation and Land Use. 5 hours.

Prerequisite: GGY 459/659 or MKT 559.

Reciprocal relations between urban transportation, both freight and passenger, and urban land use organization in terms of site requirements, traffic generation characteristics and circulation problems.

672. Geography of World Population Distribution. 5 hours.

Prerequisite: Ten hours in geography or permission of department.

A description of contemporary patterns in world and continental distributions of people and locational analyses of these patterns and their changes.

701, 702. Principles in Regional Geography for Teachers. 5 hours each.

Prerequisite: 10 hours in geography or two years of teaching experience.

A course designed to inculcate principles and concepts in regional geography through intensive analysis of regions selected on a world-wide basis. (Does not carry graduate credit for the M.A. or M.S. degrees.)

800. Proseminar in Geography. 1 hour.

Prerequisite: Required of all new geography graduate students.

The geography proseminar serves as an introduction to the graduate program and the departmental faculty. Students are acquainted with major foci of research activities and directions within the department.

801. Seminar in Geographic Thought and Methods. 4 hours.

Development of geographical philosophy and methods; contemporary methodological concepts and problems. Required for all graduate majors.

803. Seminar in North American Land Utilization. 3 hours.

Problems in North American land occupation and settlement geography.

830, 831. Directed Problems in Economic and Cultural Geography. 3 hours each.

Prerequisite: GGY 459/659 or 460/660 or 461/661 and 801-802.

Problems in advanced economic and cultural geography. Topics may vary.

840ABCDGJ. Topics in Regional Geography. 3 hours each.

Prerequisite: Permission of department.

Directed readings and research in regional geography. Topics may vary from year to year.

- A. The U.S. South.
- B. Anglo-America.
- C. Latin America.
- D. Western Europe.
- G. East and Southeast Asia.
- J. Soviet Union.

841ABCDG. Topics in Regional Geography. 3 hours each.

Prerequisite: Permission of department.

Directed readings and research in regional geography. Topics may vary from year to year.

- A. The U.S. South.
- B. Anglo-America.
- C. Latin America.
- D. Western Europe.
- G. East and Southeast Asia.

853. (ANT) Urbanization in Developing Areas. 3 hours.

Prerequisite: GGY 412/612, 459/659, or equivalent.

Focuses on major topics in urbanization, internal structure of cities and associated spatial processes in developing areas.

860A. Urban Geography. 3 hours.

Prerequisite: GGY 459/659.

Topics and research problems in urban geography. Topics will vary from year to year.

860B. Geography of Transportation. 3 hours.

Prerequisite: GGY 463/663.

Topics and research problems in geography of transportation. Topics will vary from year to year.

860C. Industrial Geography. 3 hours.

Prerequisite: GGY 460/660.

Topics and research problems in industrial geography. Topics will vary from year to year.

PHYSICAL GEOGRAPHY AND TECHNIQUES

600. Advanced Terrain Analysis. 5 hours.

Prerequisite: GGY 121 or GLY 125 or permission of department.

Identification of terrain parameters, their quantitative expression and areal variations. Emphasis on small stream basin analysis, and fluvial morphology.

601. Microclimatology. 5 hours.

Prerequisite: GGY 120 or permission of department.

Physical basis for microclimatological analysis including solar and longwave radiation, the energy balance and water budget. Procedures for evaluating the ground, latent (evaporative) and sensible heat fluxes. Examination of the resulting microclimates of natural environments (non-vegetated and vegetated including forests) and man-modified environments (agricultural, urban, buildings). Term project required.

603. Introductory Spatial Analysis. 5 hours.

Prerequisite: GGY 350 and STA 200 or permission of department.

Introduction to techniques used to study the patterns of points, lines, areas, and surfaces depicted on maps. Use of parametric and non-parametric statistical techniques to describe and make inferences from information contained on maps.

606. Regional Synoptic Meteorology. 5 hours.

Prerequisite: GGY 120 or permission of department.

Investigation of the dynamics and general circulation of the atmosphere including analyses of surface-upper atmosphere links. Tropospheric waves, vorticity influences, jet streams, cyclogenesis, tropical depressions, hurricanes. Implications for long-range forecasting; geographic expressions of mean tropospheric wave patterns. As a synthesis, examination of regional climatic patterns and anomalies throughout the world. Term project required.

608. Quaternary Paleoclimatic Geomorphology. 5 hours.

Prerequisite: GGY 121 or GLY 125, and GGY 400/600 or equivalent or permission of department.

The geomorphic, isotopic and palynological evidence of Quaternary paleoclimates is examined and chronology problems discussed. The effects of past climatic changes upon present landscapes are evaluated. Attention is

given to short-term fluctuations in temperature and precipitation that have occurred in historic times and to possible explanations for climatic change.

609. Bioclimatology. 5 hours.

Prerequisite: GGY 120 or 122 or permission of department.

In this course the interaction of climate with organisms, communities and ecosystems is discussed and then demonstrated in the field. The mechanisms of heat flow, radiation exchanges and water vapor flux; environmental variables in time and space are investigated, as well as the basic statistics needed to deal with climatic data. Case studies are examined which demonstrate climate's specific role in the functioning of ecosystems. Attention is directed to the use of bioclimatic methods to improve environmental impact assessment.

610. Conservation Ecology and Resource Management. 5 hours.

Prerequisite: Permission of department.

An ecologic and economic analysis of the interaction of man and environmental resources within different cultural and geographical contexts with emphasis on environmental quality, planning, and decision making. The ecosystem concept is the basic framework for the course, and the major ecosystems of the earth are viewed as discrete resources.

616. Cartographic Design and Reproduction. 5 hours. Three lectures and two lab periods.

Prerequisite: GGY 350 or permission of department.

Principles of design, readings from the literature, map reproduction methods and their effects on design. Practice in the production of thematic maps from the collection of data to their final form, use of advanced instruments.

619. Computer-Assisted Cartography and Graphics. 5 hours.

Prerequisite: GGY 350.

Introduction to the theory and application of computer technology in the preparation of thematic maps and other graphics. Emphasis is placed on the creation, analysis, and display of statistical surfaces. Students experiment with existing computer mapping programs and develop their own cartographic software in certain instances.

620. The Use and Interpretation of Aerial Photographs. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Four or more quarters of geography, geology, environmental design, forestry, agriculture or permission of department.

Principles of air photo interpretation and photogrammetry. Use of photos and photogrammetric instruments in planimetric, topographic and type mapping; in remote sensing; in making measurements and inventories; in sampling, and in planning. Project work involves the interpretation of terrain, vegetation and culture.

622. Advanced Photogrammetry. 3-5 hours. Lecture and laboratories arranged as required. Prerequisite: GGY 420/620.

Directed work on practical photogrammetric problems. Mastery of photogrammetric techniques and instruments as related to earth science applications.

623. Remote Sensing of Environment. 5 hours. Prerequisite: PCS 128, GGY 420/620 or permission of department.

A consideration of the principles of remote sensing with emphasis on aerospace applications in the natural sciences. A review of fundamental properties of the electromagnetic spectrum followed by studies of remote sensing devices such as multispectral cameras, thermal infrared line scanners, and television and radar imaging systems. The course is oriented toward the particular interests of participating students.

625. Field Methods in Physical Geography. 4 hours.

Prerequisite: 15 hours in geography, including GGY 350 or equivalent.

Methods in measurement, observation, recording and synthesis of field data in physical geography. Students conduct field research and present oral and written reports (with maps) of findings.

629. Special Problems in Area Analysis. 1-5 hours.

Prerequisite: 15 hours in courses numbered above 300 in geography and permission of department.

676. (BOT) Plant Geography. 5 hours.

See BOT 476/676.

802. Advanced Spatial Analysis. 3 hours.

Prerequisite: GGY 403/603 or permission of department.

Application of multivariate statistical procedures to research problems in geography. Focus is placed on peculiarities of such applications due to problems of spatial autocorrelation and areal aggregation of data.

809. Seminar in Bioclimatology. 3 hours.

Prerequisite: GGY 409/609 or permission of department.

Advanced problems in bioclimatology, in-

cluding research design, applications of statistical methods, model building, and related methodology.

812, 813, 814. Directed Problems in Climate and Water. 3 hours each.

Prerequisite: GGY 401/601.

Advanced problems in climatology and water resources. Topics and areas involved may vary.

816, 817, 818. Directed Problems in Geomorphology. 3 hours each.

Prerequisite: GGY 400/600 and/or 402/602.

Advanced problems in geomorphology and physiography. Topics and areas under investigation may vary.

821. Advanced Problems in Cartography. 3 hours.

Prerequisite: GGY 802.

Special problems in the application of cartographic and related techniques to regional analysis. Emphasis on problems involving current research.

824. Geographic Information Systems. 3 hours. Field trips.

Prerequisite: GGY 420/620, 423/623, or permission of department.

Geographic information systems for geographic planning, resource inventories, and environmental analysis. Review of commercial, state, and federal systems. Remotely sensed data as input to information systems. Exercises involve the use of digitizing and CRT display equipment and the manipulation of software routines to optimize land management plans.

825. Problems in Remote Sensing of Environment I. 3 hours.

Prerequisite: GGY 420/620, 422/622, or 423/623.

Advanced problems in photointerpretation, photogrammetry and remote sensing. Topics and areas of investigation may vary. Emphasis on research and applications.

826. Problems in Remote Sensing of Environment II. 3 hours.

Prerequisite: GGY 825.

Advanced problems in photointerpretation, photogrammetry and remote sensing. Topics and areas of investigation may vary. Emphasis on research and applications.

930. Thesis. 1-15 hours.

GEOLOGY (GLY)

J. Hatten Howard, III

(Geography-Geology-Speech Building, South Campus)

Doctoral language requirement: one or two foreign languages, at the discretion of the student's advisory committee, with the department responsible for determining proficiency in the second language.

The department offers instruction and opportunities for research in archaeological geology, economic geology, geochemistry, geophysics, hydrogeology, marine geology, mineralogy, paleontology-micropaleontology, petrology, stratigraphy-sedimentology, and other fields. Graduate programs leading to the MS and PhD are individually arranged to fit each student and his/her background.

Facilities for graduate training and research include analytical and experimental laboratories containing X-ray diffraction and fluorescence equipment, emission and atomic absorption spectrographs, mass spectrometers, electron microscopes, and an electron microprobe. Special facilities include a stable isotope laboratory, a potassium-argon laboratory, a carbon-14 dating laboratory, a neutron activation analysis laboratory, paleontological and sedimentological laboratories, and laboratories for sample preparation, optical determination, and photomicroscopy. Geochemical laboratories house cold seal "bombs," high P-T large volume autoclaves and NBS type tetrahedral anvil. Geophysical laboratories house equipment for magnetic, compressibility, phase transformation, and gas-solid interaction studies, and for studies by triaxial stress techniques. The university's Marine Institute on Sapelo Island and the Skidaway Institute of Oceanography at Savannah provide facilities for research in marine geology. Companion facilities include the university computer center, electron microscopy laboratory, field vehicles, instrument shops, and rock, mineral, and fossil collections.

603. Invertebrate Paleontology. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 126 or BIO 102.

Principles of invertebrate paleontology. Study

of fossil specimens, emphasizing relationships between living and extinct marine organisms. Classification and history of major invertebrate phyla.

604. Geology Seminar. 1-6 hours.

Reviews and discussions of classical studies; lectures on current research, new developments in the field. Special lectures by visiting scientists.

605. Sedimentation and Stratigraphy. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 126, GLY 323 recommended.

The origin and distribution of sedimentary rocks. Environmental conditions involved in the transportation and deposition of sediments. Vertical sequences and lateral correlations in layered rocks. Typical stratigraphic associations.

607. Geology of the Southern States. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 125 and 126.

Structural and stratigraphic relationships in southern geology, analyzed in terms of distribution, lithology, and economic implications.

608. Optical Mineralogy. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 321 or equivalent.

Determination of the optical properties of minerals with the petrographic microscope. Identification of the common rock-forming minerals using oil immersion and thin section techniques. Introduction to the petrographic description of rocks.

609. Marine Geology. 5 hours.

Prerequisite: GLY 125 and 126.

Study of the geologic aspects of ocean basins, including morphology, sedimentation processes, and mode of origin.

611. Principles of Geochemistry. 5 hours.

Prerequisite: CHM 122, GLY 323.

Composition of the earth. Distribution of elements in minerals and rocks. Principles governing the migration and concentration of elements. Introduction to nuclear geology and geochemical prospecting.

614. X-Ray Crystallography. 5 hours. Three lectures and two lab periods.

Prerequisite: MAT 253.

Symmetry elements, crystal projections, point groups, space groups, crystal systems, crystal notation, optical goniometry. Determination of cell dimensions and space group; X-ray powder methods, single crystal X-ray methods.

615. Applied Oceanography. 5 hours. Lectures; field excursions.

Prerequisite: MAT 253, PCS 127, CHM 121.

Examination of physical, chemical, geological, and biological aspects of marine environments, emphasizing the application of principles and methods of solving specific problems in marine science. Lectures, data analysis, and field trips focus upon research problems currently being investigated in Georgia waters.

616. Coastal Geology of Southeastern United States. 3 hours. Lectures and regional field trip.

Prerequisite: GLY 405/605, 409/609.

Lectures and field studies on the geologic history and development of Quaternary coastal and nearshore features of the southeastern states. Major emphasis on field excursion to selected rock exposures and present-day depositional environments, including Florida Keys, scheduled during break between Winter and Spring quarters; written report required.

618. Applied Structural Geology. 3 hours.

Prerequisite: GLY 332, 323, 408/608.

Structural geology required for field oriented research, including: techniques used in interpretation of folds and faults; recognition, description, and interpretation of rock fabric; interpretation and preparation of geologic maps; discussion of tectonic regimes and structural associations.

619. Geological Data Analysis. 5 hours.

Prerequisite: GLY 437/637 or equivalent, or permission of department.

Analysis of geological data with emphasis on statistical methods. Geological trends, multivariate data analysis, ratios and variable of constant sum, the lognormal distribution, exploratory data analysis, simulation. Selected problems in theoretical and applied geology.

622. Hydrogeology. 5 hours.

Prerequisite: GLY 125 and 126, or equivalent.

The hydrologic cycle and review of the quantitative treatment of its elements. Quantitative methods for ground-water flow, open-channel flow, sediment transport, channel characteristics, and drainage networks. Introduction to water chemistry and quality. Water as a resource. (Surface hydrography is covered in detail in FRS 411/611.)

625. Field Methods in Geology. 2 hours.

Prerequisite: 15 hours in geology courses numbered above 200 plus at least B average

in jr./sr. major courses.

Theory and practice of field measurement, large scale planimetric and topographic mapping, and grid surveying. Graphic presentation of field data.

626. Geological Mapping of Saprolite. 3 hours. One lecture and two lab periods.

Prerequisite: GLY 323.

The weathering processes of saprolitization. The recognition of parent rock by the field examination of saprolite. Geologic mapping in deeply weathered terrains. Preparation of a geologic map.

627. Geology Field School. 5 hours. Five field weeks in June and early July.

Prerequisite: GLY 321, 323, 332; GLY 405/605 recommended.

Introduction to geologic mapping techniques: training in the use of aerial photographs, topographic maps, and stereographic projections; basic methods of description and measurement of stratigraphic sections. Regional geologic settings stressed through reports which accompany field maps.

629. Ocean Technology. 3 hours.

Prerequisite: GLY 409/609 or permission of department.

A review of technology currently being applied by the academic, governmental and industrial communities for exploration and development of marine resources.

630. Clay Mineralogy. 4 hours. Three lectures and one lab period.

Prerequisite: GLY 405/605, CHM 121; GLY 321. Structure and properties of clay minerals. Effects of environmental factors on their origin and uses. Identification of clay minerals by optical and X-ray methods.

631. Metallic Ore Deposits. 5 hours. Five lectures plus field trips.

Prerequisite: GLY 321 and 332.

Classification and origin of metallic ore deposits; relationships between mineral deposits and host rocks; ore controls. Discussion of the major deposits of base metals, precious metals and ferrous metals.

632. Industrial Rocks and Minerals. 5 hours. Four lectures and one lab period plus field trips.

Prerequisite: GLY 321 and 332.

Classification and origin of industrial rocks and minerals. Relationships between deposits and formative geologic processes. Emphasis on resources important in domestic and international trade. Economics of exploration and development.

634. Mineralogy of Opaque Minerals. 2 hours.

Prerequisite: GLY 408/608.

Physical and optical properties of opaque minerals. Identification of opaque minerals by mineralographic methods — reflectivity, microhardness, and rotation properties.

636. Exploration and Evaluation of Ore Deposits. 5 hours. Four lectures and one lab period.

Prerequisite: GLY 321 and 332.

Exploration methods. Surface expression of buried ore deposits. Planning of drilling programs. Computation and presentation of ore reserves. Exploitation methods. Mine valuation and financing.

637. Geostatistics. 5 hours. Four lectures and one lab period.

Prerequisite: STA 200 or 421/621.

Statistics applied to geology. Distributions, sampling, inference, analysis of variance, distributions and transformations, geological sampling, variability in geological data.

638. Geology of Energy Resources. 5 hours. Four lectures, one lab period plus field trips.

Prerequisite: GLY 332 and 405/605.

Origin and occurrence of principal geologic energy resources: petroleum, coal, and uranium. Discussion of tar sands, oil shale, synthetic hydrocarbons from coal, and geothermal steam. Emphasis on major deposits, reserves, exploration practices, production methods, economics and environmental considerations. Domestic energy policy.

641, 642, 643. Introduction to Research. 2-5 hours each.

An introduction to the literature of geology, research procedures and instrumental techniques.

- a. Mineralogy
- b. Geochemistry
- c. Geophysics
- d. Oceanography
- e. Petrography
- f. Petrology
- g. Stratigraphy
- j. Paleontology

644. Principles of Chemical Mineralogy. 5 hours.

Prerequisite: CHM 122; MAT 254; PCS 128.

The study and application of thermochemical principles and methods to problems in mineralogy, petrology, and geochemistry.

651. Micropaleontology. 5 hours.

Prerequisite: GLY 126 or BIO 102.

Morphology and systematics of principal groups of animal microfossils. Stratigraphic,

paleoecologic and phylogenetic relationships; with particular emphasis on Foraminifera.

652. Introduction to Paleoecology. 5 hours. Four lectures and one lab period.

Prerequisite: GLY 403/603 or equivalent.

Study of factors governing the abundance and distribution of ancient organisms, with emphasis on marine invertebrates. Comparison with ecology of extant organisms. Survey of ecologic principles, adaptations of organisms, and environmental parameters. Preservability and taphonomy of organisms. Paleoecology as a tool in sedimentary geology.

653. (ZOO) Vertebrate Paleontology. 5 hours. Three lectures and two lab periods plus field trips.

Prerequisite: GLY 126 or ZOO 226.

The evolution of vertebrate animals as seen in the fossil record, with emphasis on their relationships, ecology, and functional morphology.

655. Introduction to Trace Fossils. 4 hours.

Prerequisite: GLY 403/603, 405/605.

Origin, classification, and environmental significance of trace fossils. Organism-substrate relationships; physical and biogenic sedimentary structures. Organisms as geologic agents. Emphasis on marine invertebrate traces and tracemakers.

656. Marine Paleoecology and Taphonomy. 5 hours. Lectures, laboratory work, and field trips.

Prerequisite: GLY 403/603 and 405/605 or their equivalents.

Paleoecologic significance of present-day marine organisms and their potential preservation as fossils. Factors controlling the facies distribution of benthic organisms, their substrate relationships and associated physical and biogenic sedimentary structures, and their disposition after death. (Summer course, based at Skidaway Institute of Oceanography, Savannah.)

660. Solid Earth Geophysics. 5 hours.

Prerequisite: GLY 323, 332, PCS 128.

The student will use the principles of geophysics in evaluating the dynamics and bulk properties of the earth. Topics will include earthquake seismology, geodesy, geomagnetism, the thermal history of the earth, earth resistivity methods, the composition and state of the earth's interior, and the new Global Tectonics hypothesis.

662. Exploration Geophysics. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 323, 332, PCS 128.

Geophysical techniques used to determine

the presence and extent of deposits of minerals and the subsurface structure of a selected locality from field measurements.

663. Photogeology. 4 hours. Two lectures and two lab periods.

Prerequisite: GLY 323, 332; GGY 420/620; recommended—GLY 405/605.

Advanced principles of photogeology. Geologic interpretations and measurements from aerial photography. An introduction to geologic interpretation of color photography and spacecraft imagery of planetary surfaces.

664. Paleomagnetism. 5 hours. Four lectures and one lab period.

Prerequisite: GLY 321, 323, 332, PCS 128.

Application of the principles of rock magnetism and paleomagnetism as a geologic tool. Topics include: magnetic minerals, magnetization of rocks, the geomagnetic field, magnetic reversals, data analysis, polar wandering, and mass extinctions. Application of rock magnetism to a specific laboratory problem.

665. Applied Geochemistry. 5 hours.

Prerequisite: CHM 121-122, GLY 125-126.

Primary and secondary dispersion of elements. Geochemical surveys applicable to soil fertility, environment and health research, and mineral exploration. Atomic absorption, colorimetry, and x-ray fluorescence analysis included in lab exercises.

700. Geology for Teachers. 5 hours. Lecture and demonstration.

Prerequisite: 20 hours physical and/or biological sciences, at least 5 of which must be chemistry. Not open to geology majors.

Cultural and practical aspects of earth study. Identification of common rocks and minerals. Geologic principles and processes; outline of earth's history.

720. (LAR) Environmental Geology. 5 hours.

Four lectures and one lab period plus field trips.

Prerequisite: Enrolled in professional programs in LAR or permission of department.

Discussion of geologic materials and processes with an emphasis on environmental interpretation for planning, land use and construction practices. Role of water, geologic hazards and geotechnical inputs to environmental-impact assessment. Site evaluation, sequential land use, mined-land reclamation and waste management. (Course not open to geology majors or geology graduate students.)

800. Petrography and Petrology of Igneous, Sedimentary, and Metamorphic Rocks. 5 hours.

Prerequisite: GLY 408/608.

Introduction to the study of rocks in thin sections. Interpretation of mineralogy, textures, and structures in igneous, sedimentary, and metamorphic rocks.

801, 802, 803, 804. Advanced Topics. 1-5 hours.

Prerequisite: Permission of department.

Intensive study under the direction of staff members on approved topics.

- a. Mineralogy
- b. Geochemistry
- c. Geophysics
- d. Oceanography
- e. Ore Deposits
- g. Petrology
- j. Sedimentation
- k. Stratigraphy
- m. Structural Geology
- n. Paleontology

805. Advanced Stratigraphy. 3 hours.

Prerequisite: GLY 403/603 and 405/605.

Major concepts in lithostratigraphy and biostratigraphy. Paleozoic, Mesozoic and Cenozoic stratigraphic sequences in North America.

806. Advanced Sedimentation. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 405/605, MAT 253, PCS 127.

Physical and mathematical analysis of sediment erosion, transport, and deposition, with application to ancient and modern sedimentary environments, and to evaluation of mineral resources and engineering problems. Analysis of depositional system and development of sedimentary basins.

807. Sedimentary Facies Models. 5 hours.

Prerequisite: GLY 806

Principles, methods, and purposes of facies modeling. Integration of physical, chemical, and biological characteristics of major sedimentary environments. Use of facies models in predicting parameters, processes, and distribution of recent and ancient depositional systems.

809. Paleooceanography. 3 hours.

Prerequisite: GLY 409/609, 405/605.

History of temporal and environmental changes in physical, chemical, and biological components of the ocean as recorded in deep-sea sediments and oceanic crust. Emphasis is placed on the role of paleoclimates in the evolution of the ocean.

813. (MIB) Chemical and Physical Oceanography. 5 hours.

See MIB 813.

816. Advanced Igneous Petrology. 5 hours.
Three lectures and two lab periods.

Prerequisite: GLY 444/644 and 800.

Mineralogy and geochemical characteristics of igneous rocks; phase relationships, thermodynamic parameters; element distribution and fractionation; geothermometry, geobarometry, physical properties of silicate melts. Use of mineralogical and geochemical data in analyzing the origins of a volcanic and plutonic rock suite.

822. Advanced Metamorphic Petrology. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 444/644 and 800.

Mineral interactions in metamorphic rocks as functions of pressure, temperature and chemical environment; geometrical and thermodynamic restrictions on the conditions of metamorphic reactions; development of a petrogenetic grid for regional metamorphism; laboratory exercises in description of metamorphic mineralogy, textures, and interpretation of same; preparation of integrated petrological reports.

825. Plate Tectonics. 3-5 hours.

Prerequisite: GLY 323, 332, 405/605, and at least three other senior division or graduate geology courses.

Orogenic belts and world rift system; physical properties, chemical composition, and mineralogy of the earth's mantle; structure and petrology of the earth's crust; geosynclines and the orogenic cycle; continental drift; paleomagnetism; polar wandering; sea floor spreading.

835. Geochemistry and Petrology of ore Deposits. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 634, 411/611 or 444/644 or equivalent.

Application of basic principles of geochemistry to problems of ore deposits. Review of current research methods and topics in the geochemistry of ore deposits.

845. Geochronology and Isotope Geology Seminar. 2-3 hours.

Prerequisite: GLY 411/611.

Introduction to the theory and application of age determination of natural materials; application of isotopes as tracers in natural processes and as geothermometers.

860. Advanced Geophysics 3 hours.

Prerequisite: GLY 460/660, 462/662.

Advanced aspects of solid earth geophysics to include topics in seismology, gravity, and magnetism. The course will include a trip to the ATLWSSN seismic station in Atlanta.

900. Research Problems in Geology. 1-5 hours.

Prerequisite: Permission of department.

This course permits students to pursue intensive study under the direction of the faculty on approved research problems in various fields of geology. Maximum credit of 50 hours, with no more than 10 hours credit with grade toward satisfying the requirements for any one degree.

930. Thesis. 1-15 hours.

GERMANIC AND SLAVIC LANGUAGES

Ludwig Uhlig
(Meigs Hall, North Campus)

The department offers work in all the major fields of Germanistic studies. Required for the master's degree is a reading knowledge of one modern foreign language besides German. Other requirements for the MA, MAT, and MEd degrees in German may be obtained from the coordinator of graduate studies in German. A written comprehensive examination is also required. Non-natives who have not had recent residence in Germany are expected to take 10 to 15 hours of their course work at the University System of Georgia's Studies Abroad Center in Germany. Required of candidates for all the education degrees, and recommended for all candidates, is experience in constructing language laboratory exercises, recording them, and evaluating their effect on beginning students.

GERMAN (GER)

610. Advanced Composition and Conversation. 5 hours.

Prerequisite: GER 210 or equivalent.
Advanced oral-aural language study including phonetics and linguistics, combined with advanced grammar and stylistics.

620. German Culture. 5 hours.

Prerequisite: GER 201 and 202 or equivalent.
German cultural history from Luther to the present.

625. Survey of German Literature. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.
German literature from the Old High German Period to the present. Texts from the older period will be read in New High German translation.

630. German Drama I. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.
Reading and interpretation of texts in their historical and literary-historical context.

631. German Drama II. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.
Interpretation of dramas representative of the significant literary movements from Naturalism until today.

632. The Age of Goethe (Sturm und Drang to Schiller's Death). 5 hours.

Prerequisite: GER 201 or 202 or equivalent.
The Sturm und Drang group, including Goethe and his role in it, Schiller's work, other contemporaries including Hölderlin, and ending with Schiller's death in 1805.

633. Age of Goethe (1805-1832). 5 hours.

Prerequisite: GER 201 or 202 or equivalent.
The older Goethe, from Schiller's death in 1805 to 1832. Emphasis on Goethe's mature works, *Wahlverwandschaften*, *Westöstlicher Divan*, and *Wilhelm Meisters Wanderjahre*.

634. Goethe's Faust I and II. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.
Reading and interpretation.

635. German Novelle of the 19th and 20th Centuries. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.
The development of the genre, reading and interpretation of representative texts.

636. German Romanticism. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.
German Romanticism from 1790 to 1825. The study of this movement in regard to its literary, historical and cultural context.

637. Modern German Literature. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.
Reading and interpretation of representative samples of 20th Century literature.

638. (LIN) Contrastive Grammar: German-English. 5 hours.

Prerequisite: Two years of college German or permission of department.
Prepares future teachers of German to isolate and identify pedagogically important structural similarities and differences.

639. The German Lyric. 5 hours.

Prerequisite: GER 201 and 202 or permission of department.
A study of German lyrics and ballads from the time of the Minnesingers to the present.

641. German Prose. 5 hours.

Prerequisite: GER 201 or 202 or permission of department.
Reading and interpretation of selected important novels and *novelle*.

646. (LIN) Linguistic Structure of German. 5 hours.

Prerequisite: Two years of college German or permission of department.

Emphasis on phonetics, phonology and intonation, with introduction to the overall structure of German.

648. German Realism and Naturalism. 5 hours.

Prerequisite: GER 201 or 202.

Study and analysis of the representative prose works of the major realists and naturalists of the 19th Century with emphasis on Hebbel, Keller, Storm, Meyer, Fontane, and Hauptmann. A term paper will be required. The course is taught in German.

652P. (HIS) A Review of German History Since the Reformation. 5 hours.

Prerequisite: 20 hours of German above 104 or permission of the department.

An interpretative survey of German history since the Reformation. The impact of political developments and cultural trends will be stressed. The German language will be used in lectures and seminar sessions.

660. (LIN) History of the German Language. 5 hours.

Study of the origins of modern standard German from the Indo-European parent language, through proto-Germanic, Old and Middle High German, and the early modern period.

750. Problems and Methods of Teaching College German. 5 hours.

Prerequisite: Graduate level facility in German is required.

This course will cover topics important for foreign language teaching in general as well as deal with specific methods for developing language skills in German. For majors in German and Language Education.

832. Gothic. 5 hours.

Morphology, phonology, and history of the Gothic language on the basis of the Gothic New Testament with emphasis on the development of earlier languages and the development into later language forms.

833. Old High German. 5 hours.

The linguistic structure of OHG and its importance in the development of Modern Standard German and the various nonstandard present day dialects. Readings in the literature of the OHG period.

840. (LIN) Middle High German. 5 hours.

Phonology and grammar of the language, with extensive readings in the prose, the epic poetry and the lyric poetry of the Middle High German era.

841. Proseminar. 5 hours.

Introduction to bibliography and methodology of research in German literature and linguistics.

850G. Seminar. 5 hours.

Advanced research on topics to be changed annually.

851, 852. Seminar. 5 hours each.

Advanced research on topics to be changed annually.

900. Problems in Germanic Studies. 5 hours.

Prerequisite: Permission of department.

Designed to permit advanced students to do specialized work including a research paper on an individual basis with a specific professor in areas not now covered by a course.

930. Thesis. 1-15 hours.

RUSSIAN (RUS)

600. Business Russian. 5 hours.

Prerequisite: RUS 101, 102.

Introduction to the nomenclature and protocol of East-West trade relations. Acquisition of Russian business terminology.

601. Introduction to 19th Century Russian Literature. 5 hours.

Prerequisite: RUS 310 or equivalent.

A study of representative works in the original language. The course is conducted in Russian.

602. Introduction to 20th Century Russian Literature. 5 hours.

Prerequisite: RUS 310 or equivalent.

A study of representative works in the original language. The course is conducted in Russian.

RUSSIAN TRANSLATION (RUT)

605. 19th Century Russian Prose in English Translation. 5 hours.

This course will cover various topics in Russian literature. The class will be conducted in English, and all readings will be done in translation.

606. 20th Century Russian Prose in English Translation. 5 hours.

Reading and discussion, in an historical context, of works by A. Bely, A. Solzhenitsyn, B. Pasternak, V. Nabokov, M. Bulgakov. Ye. Zamyatin, Yu. Olesha.

SCANDINAVIAN (SCA)

601. Danish, Norwegian and Swedish Translation. 5 hours.

Prerequisite: At least 3 terms of another foreign language or permission of department. This course will teach a reading knowledge of the three mutually intelligible dialects of mainland Scandinavia, usually referred to as Danish, Norwegian and Swedish. Their common grammatical structures and basic vocabulary will be taught, the numerous parallels to English drawn, and their minor orthographic, grammatical, and vocabulary differences explored.

GERONTOLOGY (GNT)

James E. Montgomery
(Candler Hall, North Campus)

For information on the certification program in gerontology and for specific courses on aging, see page 56. Below are listed the courses having a gerontology prefix.

600. Seminar in Aging. 5 hours.

Prerequisite: Upper division or graduate standing and admission to the gerontology program.

An introduction to basic concepts of gerontology in an interdisciplinary setting to provide the student with a theoretical framework upon which to base further study and research in the field of aging. Required of all candidates for the Certificate in Gerontology.

639. Service-Learning with the Elderly. 5 hours.

Prerequisite: GNT 400/600; students who have not completed GNT 400/600 will be required to complete a non-credit seminar in gerontology offered by the Gerontology Center. Supervised field experience designed to assist in reinforcing knowledge, theories and principles gained through courses in or related to the field of gerontology.

GRADUATE SCHOOL (GSC)

John Dowling
(Boyd Graduate Studies Building,
South Campus)

Courses having a Graduate School prefix are listed below.

777. Graduate Internship. 1-5 hours.

Prerequisite: Permission of school.

Supervised performance of duties assigned.

900. Research. 1-5 hours.

Prerequisite: Permission of school.

Graduate research for academic credit under direction of faculty.

927. Graduate Study Completion. 5 hours.

Prerequisite: Permission of school.

This course is designed for graduate students completing degree requirements who will be using staff time or University facilities and for whom no regular course is appropriate.

HISTORY (HIS)

Lester D. Stephens
(LeConte Hall, North Campus)

The history department offers work leading to the MA and PhD degrees. The MA program in history requires 40 quarter hours of course work, including HIS 893G, 815W, and one other 800-level course. Additional requirements are: reading competence in a foreign language, a thesis, and an oral examination. The PhD student in history must demonstrate through both written and oral comprehensive examinations a thorough knowledge of four fields of history, or, preferably, three fields of history and a field in another discipline. HIS 893G and 815W are required if not previously taken. In addition, PhD students must complete HIS 893A, and three other seminars (i.e., 800-level courses). However, if HIS 893G and/or 815W have not been completed, either or both may with the permission of the major professor and the endorsement of the Coordinator of Instruction be counted in fulfillment of part of the additional seminar requirements. A reading competence in two foreign languages is required of all doctoral candidates, but with the permission of the major professor and the endorsement of the department's Coordinator of Instruction, two courses in quantitative methodology may be substituted for one foreign language. A dissertation may be presented in United States, European, or other selected fields of history.

The graduate program stresses research and writing under faculty guidance. In addition, students possessing the MA degree may also receive practical experience in teaching by holding teaching assistantships. The department awards a number of teaching assistantships and departmental non-teaching assistantships each year. Application for these should be made directly to the department's Coordinator of Instruction.

600P. The American People and the Conditions of Freedom Since 1865. 5 hours.

Prerequisite: HIS 251 or 252.

The relationship between the American people and their social, political, and economic institutions constitutes the central focus. The structure of authority, the problems of the market, class, modernization, and hegemony

are analyzed in the context of pressure to subordinate the individual and community to the demands of the state and economy.

601C. History of Criminal Justice. 5 hours.
Prerequisite: Must have completed at least 20 hours of advanced course work in the social sciences and/or history or permission of department.

This course will trace the historical development of Western criminal justice mechanisms from the Mosaic code to the 20th Century. It offers a critical analysis of criminal law, legal procedures, and court systems as products of historical forces, including the role of shared beliefs, traditions and distributions of power in particular cultures.

610W. The Study of Local History. 5 hours.
Prerequisite: 20 hours of U.S. history, including two upper division courses, one of which is to be an advanced course in the history of Georgia, or permission of department.

The concentration will be upon three local developments: establishment and evolution of American society in the Southeast; the recreation of this history through various scholarly measures; and techniques for teaching local history. The course will consist of a combination of fieldwork, lectures, written and/or oral history projects and independent reading.

611M. American Colonies, 1606-1763. 5 hours.
Early settlements in North America by the English, French, Spanish, and Dutch; shaping of American society by adaptation of old world forces to new world environment.

611N. Everyday Life and Customs in Colonial America. 5 hours.

The Atlantic Frontier, the development of colonial life, and the emergence of colonial arts and customs will be emphasized. The class structure of the colonies will be analyzed. Of prime concern will be the growth of American self-awareness as mirrored in colonial history and literature.

611T. Revolution and Rise of the American Nation. 5 hours.

American history from 1763 to 1800; the Revolution; the Articles of Confederation; writing and adoption of the Federal Constitution; the administration of George Washington and John Adams.

612P. The Trans-Mississippi West. 5 hours.
American political, social, and economic institutions as they developed in the region west of the Mississippi River. The impact of the frontier upon the American people.

612T. The Ante-Bellum South. 5 hours.
Begins with the late colonial period, when settlers were pushing across the southern Appalachians, and continues to the secession of the South. Southern life and civilization will be studied.

613F. The Civil War Period of American History. 5 hours.

Civilian activities of the people; problems of the Northern and Southern governments. Emphasis on the Confederacy. Only major military campaigns will be considered.

613P. The Era of Reconstruction, 1865-1877. 5 hours.

The reconstruction of the South along all lines, as well as the remaking of the North. Beginnings will be found during the Civil War; the process will be continued to 1877.

614C. The South Since Reconstruction. 5 hours.

The South since the Reconstruction period with emphasis upon social, economic, and political developments of the region.

614F. The Origins of Modern America, 1877-1917. 5 hours.

An examination of the expansion, industrialization, and urbanization of the United States, of the emerging political, economic and social problems, and of the political responses to the development of the era.

614P. Recent America, 1917 to 1945. 5 hours.
The history of political, economic, social and cultural development during the present century.

614T. Modern America, 1945-Present. 5 hours.
An examination of social, economic, diplomatic and political trends in the United States during the post-World War II era.

615E. Constitutional History of the United States. 5 hours.

A study of how actual political and social conditions in American history have produced fundamental constitutional principles and practices.

615F. American Legal History. 5 hours.
A survey of American legal history from the Revolutionary era to the present which emphasizes the evolution of legal thought and institutions, changes in the nature of the legal profession and legal education, and the role of law and the courts in American political, economic, and social development.

615P. American Political Trials. 5 hours.

Prerequisite: One course each in history of U.S. to 1865 and since 1865; an undergraduate major in history, legal studies, or a social science, or permission of department.

Historical analysis of the exploitation of law and the judicial process for political purposes by American governments and their opponents from colonial times to the Vietnam era, with emphasis on the causes of political justice and its impact on civil liberties, especially freedom of expression.

615T. American Cultural History Since the Mid-19th century. 5 hours.

A study of the principal developments in American philosophy, science, literature and art.

615W. Women in American History and Culture. 5 hours.

An introduction to the social science background of the American feminist movement. Emphasis will be placed on women in nineteenth century social movements, in the drive for suffrage and liberation and in contemporary feminism.

616M. Problems in American Foreign Policy, 1776-Present. 5 hours.

A study of selected problems with emphasis on readings.

617M. History of Georgia. 5 hours.

Georgia from its first occupation by the Spaniards to the present. A comprehensive discussion of all aspects of Georgia's development. (No duplicate credit for HIS 417/617N and 417P/617P.)

617N. Early and Antebellum Georgia. 5 hours.

Prerequisite: Ten hours of U.S. history.

An examination of social, economic, and political developments in Georgia from the Spanish period through the Civil War. (No duplicate credit for HIS 417M/617M.)

617P. Modern Georgia. 5 hours.

An examination of social, political and economic developments in Georgia from the Reconstruction period to the present. (No duplicate credit for HIS 417M/617M.)

618P. Modern Black America. 5 hours.

The 20th Century struggle for civil rights, black identity and self-determination. The response to industrialism and urbanization. The role of black institutions and political organizations. The philosophy and tactics of accommodations, integration, and separatism.

631F. The Caribbean Area. 5 hours.

Conquest and settlement of the islands and Caribbean periphery by the Spanish, the intrusions by the French, Dutch, and English, and the more recent developments of the 19th and 20th Centuries.

632F. Cultural History of South American Colonies. 5 hours.

The philosophical argument attending the conquest, the intellectual defense of the Indians, the theory of Spanish colonial government, and university life to 1825.

633F. Inter-American Problems. 5 hours.

Economic, social and political problems of Latin America since independence; cooperative efforts of the United States in seeking solutions within the framework of the Pan American movement and the Organization of American States.

633P. Latin America in the 20th Century. 5 hours.

Twentieth century influences that are producing socioeconomic unrest in much of Latin America; efforts of the United States and private organizations to combat the spread of these conditions.

637M. Ancient Near East. 5 hours.

A survey of the ancient peoples and cultures of the Near East from earliest historical times through the Persian empire.

638M. Greek History. 5 hours.

A study of Greek history through the time of Alexander the Great.

638P. Hellenistic History. 5 hours.

Problems in Hellenistic History from 330 B.C. to the Roman conquest with emphasis on the Antigonid, Seleucid, or Ptolemaic dynasty.

639F. Roman Republic. 5 hours.

A study of Roman history to the end of the republic.

639P. Roman Empire. 5 hours.

History of the Roman Empire from 27 B.C. to A.D. 337 with special emphasis on the government of Augustus, reasons for its decline, and the final attempt at unification of the empire under Constantine.

645F. Medieval England, 1066-1845. 5 hours.

A detailed study of English political, constitutional, legal, and feudal history from the Norman conquest to the death of Edward I.

645G. England in the Age of Chaucer, 1307-1485. 5 hours.

An investigation of political, social, and intellectual developments from the beginning

of the reign of Edward II through that of Richard III, the epoch of Shakespeare's great historical dramas and of Chaucer.

645M. Medieval Intellectual Survey. 5 hours.
Survey of medieval intellectual history. An examination of European intellectual development from Constantine to Dante.

645P. Medieval France, 987-1498. 5 hours.
An intensive study of France under the Capetian and early Valois kings. Emphasis will be placed upon political, feudal, and social history, unified by the story of the growth of the national state focussed upon the king.

650M. Intellectual History of the Renaissance. 5 hours.
Survey of Renaissance intellectual history. An examination of European intellectual history from Dante to Erasmus.

650P. Intellectual History of Early Modern Europe. 5 hours.
Intellectual history of early modern Europe. An examination of intellectual developments in 16th and 17th Century Europe.

650S. Intellectual History of Modern Europe, 1700-1815. 5 hours.
An historical study of European thought from 1700 to 1815, with emphasis on the interrelationship between political development and dominant ideas and beliefs.

650W. Intellectual History of Modern Europe, 1815-Present. 5 hours.
An historical study of European thought from 1815-1950 with emphasis upon the interrelationship between political development and dominant ideas and beliefs.

651E. History of the Reformation. 5 hours.
Intensive study of selected aspects of the Reformation with emphasis on the late medieval background, the theology of the major reformers, the establishment of the major denominations, the Council of Trent and modern historiography of the Reformation.

651M. The Age of Absolutism. 5 hours.
Europe from 1648 to 1789, with particular emphasis upon France. The political history of the age will be supplemented by examination of economic and social institutions and the Enlightenment.

652F. The French Revolution and Napoleon. 5 hours.
Europe from 1789 to 1815, centering upon events in France. Stress is placed upon the political, diplomatic and military history of the era.

652P. (GER) A Review of German History Since the Reformation. 5 hours.
See GER 652P.

653E. 19th Century Europe. 5 hours.
A history of Europe from 1814 to 1914. The main political, international, social, economic, cultural, and intellectual movements will be stressed.

653F. 20th Century Europe. 5 hours.
The history of Europe from 1914 to the present. The main political, social, economic, cultural, and intellectual movements will be stressed.

653M. France in the 19th and 20th Centuries. 5 hours.
A survey of political, social, cultural and economic developments in France since the fall of Napoleon I.

653P. The Emergence of Modern Germany 1800-1914. 5 hours.
A survey of political, social, and cultural developments in 19th Century Germany (1800-1914). Domestic events will be stressed.

657A. Military History to 1815. 5 hours.
The history of warfare in ancient, medieval and early modern times. Its techniques, theory and role in the evolution of western society.

657B. Recent Military History. 5 hours.
The history of warfare and the development of weapons, techniques, and military thought in the 19th and 20th Centuries.

657E. The Age of World War I. 5 hours.
The origins of modern world politics, culminating in World War I and the peace settlement of 1918-24. The interaction between world politics and the 20th Century ideologies—welfare-state, democracy, fascism, and communism—and the intellectual and technological roots of these ideologies.

657F. The Age of World War II. 5 hours.
A continuation of History 657E. The interwar period, the war, and its consequences with emphasis on Europe.

657M. Germany under the Weimar Republic to the Present. 5 hours.
A survey of political and social developments since 1918. Emphasis will be given to the breakdown of the Weimar Republic and the rise and structure of Nazism.

657T. The Age of the Cold War. 5 hours.
A continuation of History 657F. The political, ideological, and military conflicts and the search for new world order in the aftermath of World War II.

664E. The Tudor Period of English History, 1485-1603. 5 hours.

England's emergence as a modern state. Her political, religious, economic, social, and intellectual development during the Renaissance and Reformation.

664M. The Stuart Period of English History, 1603-1714. 5 hours.

England during the evolution of parliamentary supremacy; problems leading to the civil war, interregnum, restoration, and revolution settlement.

664T. Constitutional History of England. 5 hours.

Development of constitutional and legal institutions of England from Saxon times to the present.

665F. Britain in the Age of Revolution 1714-1868. 5 hours.

This course will discuss British foreign and domestic policies under the stress of the American War of Independence, the French Revolution, and the Industrial Revolution. Special attention will be given to the establishment of political stability and the growth of industrial society.

665G. Modern British History, 1868-Present. 5 hours.

A survey of the political, economic, social and diplomatic developments in Great Britain during the period 1868-present.

665M. British Empire and Commonwealth. 5 hours.

A survey of the British Empire from the 15th Century to 1922.

670P. Imperial Russia, 1725-1881. 5 hours.

The St. Petersburg period of Russian history to the assassination of Alexander II, and the rise of the generation which created Soviet Russia. Russian influence in world affairs will be interpreted in the light of basic changes in domestic policy after the French Revolution.

671F. The Russian Revolution and the Rise of Stalin, 1881-1927. 5 hours.

The final phase of the Russian revolutionary movement and the collapse of the empire under the impact of the wars of 1904-05 and 1914-17. The 1917 Revolutions, Bolshevik victory, and the period of the New Economic Policy.

671P. Soviet Union Since 1927. 5 hours.

Soviet Union from Stalin Revolution to present. Stresses domestic developments and rise of USSR to world power. Post-Stalin internal changes and polycentrism in Communist world.

672E. Eastern Europe Under Nationalism and Communism 19th and 20th Centuries. 5 hours.

A survey of Eastern Europe in the age of nationalism and communism during the 19th and 20th Centuries. Covers major political, economic, and social developments plus importance of the area in international relations.

678A. History of China I: The Traditional Order from Prehistory to the Sung Dynasty. 5 hours.

An examination of the political, economic, social, and cultural life of ancient China from its earliest beginnings to the Sung Dynasty. Emphasis is on traditional Confucianism, Taoism, and Buddhism, the primary molders of Chinese culture.

678B. History of China II: The Transitional State from the Sung Dynasty to the 1911 Revolution. 5 hours.

An examination of significant changes in Chinese culture, as well as an analysis of those forces within and without China that contributed to or inhibited modernization.

678C. History of China III: The Modern Transformation from the 1911 Revolution to the Present. 5 hours.

A study of China in the Twentieth Century with the focus on the Republic of China, its disintegration, the rise of Communism, and the changes in the nature of the People's Republic of China.

680P. Nationalism in North Africa and the Problems of New Power. 5 hours.

Origins of nationalism in Morocco, Algeria, Tunisia and Libya; problems involved in gaining independence, of setting up new governments, and of independently meeting difficulties that were earlier dealt with by the colonial powers.

682P. Imperialism in Africa, 1860-1919. 5 hours.

A study of the European penetration of Africa, the diplomacy of partition, and the African response.

688M. The Middle East in Modern Times. 5 hours.

Political, economic and social developments from 1800 to the present; collapse of the Ottoman empire and old Persia, nationalism and the anti-colonialist revolt, the emergence of Israel, U.S. interests and the growing Soviet presence in the area.

693M. Philosophy of History. 5 hours.

Introduction to Western historical thought and discourse from Herodotus to the present. Using the works of historians and philosophers

of history, the course will examine the discipline of history as well as the relationship of history to other disciplines.

811F. Seminar in Early American History. 5-15 hours.

A research seminar devoted to an extensive examination of selected topics in the 17th and 18th Centuries.

812T. Seminar in Middle Period U.S. History. 5-15 hours.

A research seminar in United States history of the period 1800-1877.

814A. Seminar in Recent U.S. History. 5-15 hours.

Topics on social, intellectual, cultural, political developments in U.S. history since 1900.

814C. Seminar in U.S. History, 1865-1900. 5-15 hours.

Lectures and student research topics on American history, 1865-1900, with emphasis upon the South and Reconstruction.

815M. Seminar in U.S. Social and Intellectual History. 5-15 hours.

A research seminar devoted to an examination of representative social and intellectual developments of the American colonies and the United States.

815W. Historiography. 5-15 hours.

A seminar on historical writings, both American and European (depending upon the instructor), with varying topics including the philosophy of history, books, source materials, and historical aids.

816E. Seminar in U.S. Diplomatic History. 5-15 hours.

Topics in the theory and practice of American foreign relations will vary and will cover all or part of the chronological period of 1763 to the present.

818N. Seminar in Black History. 5-15 hours.

Lectures, primarily bibliographic, and student research topics on Black history in America with emphasis given to the period since 1865.

825. (POL) Foreign Policy. 5 hours.

See POL 825.

831F. Caribbean Problems. 5 hours.

Varying research topics in Latin American history, colonial and republican, depending upon the interest of the student and instructor.

850E. Seminar in the Renaissance. 5-15 hours. Research topics in the Quattrocento and Cinquecento.

852P. Seminar in Early Modern Europe, 1648-1815. 5-15 hours.

Selected topics in early modern European history, 1648-1815.

853E. Seminar in 19th Century Europe. 5-15 hours.

Prerequisite: HIS 453M/653M and three graduate history courses or permission of department.

Selected research topics in 19th Century European diplomatic, political, social, economic, and intellectual history. Topics vary as offered.

853M. Seminar in 19th Century France. 5-15 hours.

Prerequisite: HIS 453M/653M or permission of department.

Research topics in 19th century French history: diplomatic, political, social, economic, and intellectual.

853P. Topics in French Imperial History. 5-15 hours.

Studies of the history of French expansion overseas, particularly in Africa with special emphasis on policy function and on how these were or were not applied in colonies and protectorates. (C. 1830 to c. 1862)

858E. Seminar in 20th Century Europe. 5-15 hours.

Readings and research in 20th Century European history. Topics will vary according to the interests of the student and instructor. Past topics have included European diplomacy, the Age of World War I, and the Age of World War II, and the Cold War.

893A. Teaching History in Colleges and Universities. 5 hours.

A study of the variety of methods appropriate to instruction in college level survey history courses and practices and utilization of audio visual aids and development of classroom tests.

893G. Historical Methodology. 5 hours.

Required of graduate students majoring in history. This course will include methods of research and various aids, as well as the generally accepted usages in historical composition.

900. Research in History. 1-17 hours. (Max. 20 hours)

Prerequisite: HIS 815W, 893G and completion of all required courses for MA or PhD and permission of department.

This course is for MA and PhD students in history who are in the early stages of working on theses and dissertations.

901. Directed Study in History. 1-17 hours.
(Max. 20 hours.)

Prerequisite: HIS 815W, 893G and completion of all required course work for PhD in history and permission of department.

Independent study for PhD students who have completed all required courses and are preparing for written and oral preliminary examinations.

930. Thesis. 1-15 hours.

HOME ECONOMICS

Emily Quinn Pou
(Dawson Hall, South Campus)

The College of Home Economics offers the Doctor of Philosophy degree through the Department of Child and Family Development and through the Department of Foods and Nutrition. A foreign language is not required for the doctoral degree in Child and Family Development. Graduate study leading to the Master of Science or Master of Home Economics degree is offered in the various subject matter areas including clothing and textiles, experimental foods, nutrition, family development, child development, and housing and home management, consumer economics and furnishings and interiors. In the child and family development area, the programs may be directed towards theory, group programs for children under six, college teaching in child development, administration of children's programs, working with mentally retarded children and their families, working in family service programs, teaching at the secondary level in child development or family life education. (Further details of the MHE program may be found on page 43.) Facilities include well equipped laboratories in foods, nutrition, clothing, textiles, housing and home management; the McPhaul Child and Family Development Center for infants and young children; the Athens Unit of the Georgia Retardation Center, and the University Computer Center. Applications for admission and requests for assistantships should be addressed to the dean, College of Home Economics.

CHILD AND FAMILY DEVELOPMENT (CFD)

607. A Survey of Marriage and Family Problems. 5 hours.

Prerequisite: SOC 105 or PSY 101 and permission of department.

Study of stresses that produce problems in the modern family, e.g., marital and sexual adjustment, divorce, alcoholism, illegitimacy, etc.

608. (PSY) Development of the Young Child. 5 hours.

Prerequisite: CFD/PSY 395 or equivalent.

The physical, mental, emotional, and social development of the preschool child, and the origins of psychological processes in lab work; special reference to techniques of guidance.

609. Infant Development. 5 hours.

Prerequisite: CFD 408/608 or permission of department.

Emotional, social, intellectual, and physical development in infancy. Supervised observation in Infant Center and in selected homes.

650. (HMC) Second Half of Life. 5 hours.

See HMC 650.

654. (JUR) Behavioral Science and Domestic Relations Law. 3 hours.

Prerequisite: Permission of department.

This advanced domestic relations seminar, team taught by a law professor and a child and family development professor, will examine the role of the behavioral sciences (e.g., child development and family studies) in the determination of domestic relations disputes. Both legal and behavioral science material will be used.

661. (SOC) The Family. 5 hours.

Family study utilizing data from the field of anthropology, individual and social psychology, history, sociology, economics and psychiatry.

662. Women in the Family and Society. 5 hours.

Prerequisite: Upper division standing, five hours of CFD and SOC or permission of department.

Women's roles in the family and society — the range of occupational, volunteer and other societal roles open to women; changing societal constraints on women's roles; conflicting demands on societal and family roles; strategies for handling conflicts; effects of changes in women's roles on men's roles.

670. The Family and Adolescence. 5 hours.

Prerequisite: Need 10 hours from the following: CFD 210 or CFD/PSY 395 or SOC 105 or PSY 101; senior division status.

A consideration of the unique features of the family while it is at the life cycle stage which includes an adolescent member. Special attention will be given to the process of development within the family beginning with early adolescence and continuing into adulthood. The focus on family/adolescent interaction will be understood within the context of the larger socio-cultural system.

690. (CTI/FDN/HMC) Research in Home Economics. 5 hours.

Prerequisite: Admission to graduate school.

Introduction to research design in selected areas of home economics. Emphasis on common problems incurred in measurement and data analysis.

691. Hospitalized Child and the Family. 5 hours.

Prerequisite: CFD 390 and CFD/PSY 395 and one of the following: CFD 407/607 or 495/695 or CFD/SOC 461/661.

Study of the normal and stress related needs of hospitalized children and their families and meeting of these through the Child Life Program. The hospital milieu of the child. Philosophy and development of the Child Life Program.

692. Individual and Family Development Facilitation. 5 hours.

Prerequisite: CFD 496/696 or equivalent.

Developing skills for observing social interaction and selected techniques for facilitating optimal development of individuals and families in social contexts.

695. Contemporary Family Life. 5 hours.

Prerequisite: Work in child development or family relations, SOC 105 or CFD/SOC 461/661.

A study of the changing American family and of the interpersonal relationships of family members at each stage in the family life cycle.

696. Guidance of Children and Parents. 5 hours.

Prerequisite: CFD/PSY 395 or equivalent.

Principles, techniques, and application for teaching parents and teachers in the guidance of growth and development of children and youth. Opportunities for observation and participation in child-child, child-parent, child-teacher, and teacher-parent interaction.

697. Marriage, Family, and Human Sexuality. 5 hours.

Prerequisite: Permission of department.

A survey of various attitudes, values, substantive, and theoretical materials on human sexuality, particularly the relation of these two and implications for interpersonal relations in marriage and the family.

700. Infant/Preschool Program Observation Methods and Skills. 1-10 hours.

Prerequisite: CFD/PSY 395 or permission of department.

Directed experiences in observing and recording development and behavior of children

under six leading to competencies in obtaining data basic to infant/preschool program development and guidance of children.

790. Preschool Teaching-Learning Strategies. 5 hours.

Prerequisite: CFD/PSY 395.

Philosophy and theory of preschool teaching/learning strategy. Curriculum and program development for the preschool. Guidance of the young child's development through preschool programming. Practicum in preschool settings.

791. Creative Activities in Nursery School and Kindergarten. 5 hours.

Prerequisite: CFD/PSY 395 and one additional related senior division course.

Selected types of creative activities for children of the preschool years, including literature, art, mathematics, science, music, nature study, and other materials for young children. Practical experience with these in child development laboratories.

792. Theory and Practice of Group Programs for Children Under Six. 15 hours.

Prerequisite: CFD 409/609 or 390 and CFD/PSY 395 or permission of department.

Developmental and educational theories applied to design and content of curriculum activities for children under six. Facilitation and understanding of children's development through curriculum experiences and materials. Theories of group guidance of children. Laboratory practicum with groups of children (infants through five years of age) including planning and implementing of curriculum activities.

794. Nursery School and Kindergarten Theories and Administration. 5 hours.

Prerequisite: CFD/PSY 395 and one additional related senior college course.

Instruction and observation in the basic principles of group management of children from two through five years, guidance in selection of equipment and play materials; administration and organization of nursery schools and kindergartens; visitations of pre-primary centers.

807A. Principles of Family Counseling. 5 hours.

Prerequisite: Permission of department and ten completed graduate hours in counseling related courses.

A study of principles, theoretical approaches, specific objectives, and techniques currently used in marriage and family counseling. The focus will be on normal developmental prob-

lems rather than on psychopathology. CFD 807A will concentrate on family counseling.

807B. Principles of Marriage Counseling. 5 hours.

Prerequisite: Permission of department and ten completed graduate hours in counseling related courses.

A study of principles, theoretical approaches, specific objectives, and techniques currently used in marriage and family counseling. The focus will be on normal developmental problems rather than on psychopathology. CFD 807B will concentrate on marriage counseling.

850. Current Research and Issues in Child and Family Development. 1 hour. (Max. 6 hours.)

Prerequisite: Graduate standing in Child and Family Development.

A forum for presenting current research of faculty, graduate students and visiting scholars. Discussion of current issues pertaining to child and family development.

871. Comparative Family Systems. 5 hours.

Prerequisite: A 400 level course in either family development, sociology or anthropology.

An analysis of the family in various cultures through the study of the reciprocal relation of kinship systems and society.

890. Research in Child and Family Development. 1-20 hours.

Critical evaluation of research process, conceptualization of the research problems, selection of appropriate methods of data collection, construction of research designs, collection of data, consideration of alternative data analysis strategies, interpretation of findings, research writing. (Ten hours maximum credit for a master's degree.)

892. Behavior Problems in Children. 5 hours.

Prerequisite: CFD/PSY 408/608.

The child's adjustment to his environment with a consideration of the causes, treatment, and prevention of behavior problems. Utilization of case materials. Research problems in field will be carried out by the student.

893. Client Centered Family Counseling. 5 hours.

Prerequisite: Courses in family life, child development, or psychology.

A study of major areas of adjustment in marriage and family relationships, problems of adjustment, and philosophy and techniques for family counseling.

894. Seminar in Child Development. 5 hours.

Prerequisite: Two senior division courses in child development or equivalent.

Survey of current literature on selected areas

in child development; discussion of current trends in the field; reports and discussion on selected topics; use of resource materials in the field.

895. Seminar in Family Development. 5 hours.
Prerequisite: Courses in family life, child development, sociology or psychology, and permission of department.

Survey of current literature on selected areas in family development; discussion of current research trends in the field; reports and discussion on selected topics; completion of review of empirical research paper.

896. Foundations of Child and Family Development. 5 hours.

Major substantive areas of research and other literature in child and family development will be studied. Emphasis will be placed on studies of interaction between or among family members and their impact on each other.

897AB. Theories of Human Development. 5 hours each.

Prerequisite: CFD/PSY 408/608 or equivalent.
An investigation of the origin and extension of selected theories of human behavioral, social and emotional development, particularly as these relate to development within a family context.

899. Family Theory Construction. 5 hours.

Prerequisite: CFD 890 or SOC 831 or permission of department.

Experience in developing theory through codification of family phenomena. The use of theory in the family area and experience in developing theory concerning family phenomena.

901. Independent Study in Family and Child Development. 1-20 hours.

Prerequisite: Permission of department.
Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirements.)

906. Marriage and Family Relationships Skills Practicum. 5 hours. (Max. 10 hours.)

Prerequisite: CFD 807AB and 893.
Experience in marriage and family therapy through the interaction with and observation of healthy marital/family systems. Structured experiences to develop skills in interviewing, assessing couple/family functioning, making limited therapeutic interventions, observing couple/family interaction, and developing basic aspects of the client-therapist relationship.

907. Practicum in Marriage and Family Counseling. 1-20 hours.

Prerequisite: CFD 807AB and 893 and permission of department.

Supervised experience in marriage and family counseling.

921. Problems in Home Economics. 5 hours.

Prerequisite: Three graduate courses in CFD and permission of department.

The course is designed to provide individual guidance in the development of a significant project related to the student's field of work. A written report of the problem or project will be required.

930. Thesis. 1-15 hours.

998ABCD. Internship in Child and Family Development. 5 hours each. (Max. 20 hours.)

Prerequisite: Permission of department.

Supervised professional practice in settings which employ persons with graduate degrees in child and family development. The internship can be in one of the following areas:

- A. Group programs for children under six.
- B. Human development programs.
- C. Developmentally disabled individuals and their families.
- D. Administration.

CLOTHING, TEXTILES, INTERIORS AND FURNISHINGS (CTI)

620. Advanced Textiles. 5 hours.

Prerequisite: CTI 320 and 320L.

In-depth study of fibers and finishes; emphasis on man-made fibers, new fiber and finish developments and technology.

625. Introductory Polymer Science. 5 hours.

Prerequisite: CTI 420/620, CHM 240-240L and 241-241L.

An introduction to the science of polymers including the mechanisms of polymer formation and degradation and methods of polymer characterization.

630. Clothing and Human Behavior. 5 hours.

Prerequisite: CTI 320-320L and PSY 101 or permission of department.

A multidisciplinary approach to the study of clothing with particular emphasis on psychological, sociological and economic aspects of clothing.

645. Textile Dyeing. 5 hours.

Prerequisite: CTI 325 and 420/620 or permission of department.

An in-depth study of textile dyeing processes

with emphasis on fiber-dye association. Analysis of dyeing techniques and properties of dyes and dyed materials.

664. History of Costume: Antiquity to 19th Century. 5 hours.

Prerequisite: CTI 122 and 320-320L or permission of department.

Interrelationship of costume and social, cultural, political and economic environments from antiquity to the 19th Century.

665. History of Costume from the 19th Century to Present. 5 hours.

Prerequisite: CTI 320-320L and 321 or 565/765 or permission of department.

Interrelationship of costume and social, cultural, political and economic environments from 19th Century to present day.

671. United States Study Tour in Clothing and Textiles. 5 hours.

Prerequisite: Permission of department.

An on-location study of clothing, textiles and fashion merchandising in the United States. Experiences will include lectures by recognized leaders in the field, meetings with designers, manufactures, merchants, and field trips to textile mills, apparel producers, designers' showrooms, distribution centers, retail stores, and museums.

673A. United States Study Tour in Furnishings and Interiors. 5 hours.

Prerequisite: CTI 475/675 and 477/677 or equivalent or permission of department.

A systematic study of residential interiors and furnishings as found in original, restored and reconstructed areas of the United States. Museums which feature decorative accessories and furniture, design studios, show rooms, and/or manufacturing plants will be visited.

675. Historical Homes and Furnishings. 5 hours.

Prerequisite: CTI 375 or permission of department.

A study of decoration in the past with application to contemporary interiors.

676. Decorative Accessories for the Home. 5 hours.

Prerequisite: CTI 475/675 or permission of department.

Historical and cultural development of accessories used in the home including ceramics, metals, and textiles. Design and characteristics of materials in these accessories will be covered.

677. Contemporary Home Furnishings. 5 hours.

Prerequisite: CTI 375 or permission of department.

Contemporary developments in furniture and accessories for the home; designs and materials used in contemporary homes.

678. Fabrics for Furnishings and Interiors. 5 hours.

Prerequisite: CTI 320-320L and 475/675 or 477/677 or permission of department.

Development of design, construction, fibers and finishes for fabrics with emphasis on quality and utilization of current materials for upholstery, soft floor coverings, window treatments, bed, bath, and table linens.

679. Home Furnishings Product Analysis. 5 hours.

Prerequisite: CTI 320-320L.

The study of home furnishings products in relation to quality analysis and cost/value determination, as affected by performance standards, end-use expectations, consumer needs, governmental regulations and industrial production methods.

690. (CFD/FDN/HMC) Research in Home Economics. 5 hours.

See CFD 690.

720. Physical Analysis of Textiles. 5 hours.

Prerequisite: CTI 325 and PCS 128-128L or 138-138L.

Theory, application and analysis of serviceability, wear, abrasion, strength, shrinkage and other physical components to fabric testing.

725. Chemical and Optical Analysis of Textiles. 5 hours.

Prerequisite: CTI 325 and 420/620 and CHM 241 and 241L.

Theory and application of organic chemistry and optical analysis to fabrics, dyes and finishes.

735. Textile Finishing Processes. 5 hours.

Prerequisite: CTI 325 and 420/620.

Theory, application, evaluation and identification of textile finishes and textile auxiliary processes. Examination of the role of finishing and types of finishes used in manufacturing fibers, yarns and fabrics.

761. Clothing and Textile Economics. 5 hours.

Prerequisite: CTI 320-320L and 321 or 565/765 and ECN 105 or 106 or permission of department.

Organization and functions of clothing and textile industries. Factors related to production, distribution and consumption of apparel and household textiles; special problems; field trips.

762. Tailoring. 5 hours.

Prerequisite: CTI 321 or 565/765.

Planning and making a tailored ensemble; techniques employed in custom made garments.

763. Illustrative Materials in Clothing and Textiles. 5 hours.

Prerequisite: CTI 320-320L and 321 or 565/765. Preparation of illustrative materials on problems related to selection, construction, and care of clothing and textiles. Designed for teachers, county extension agents and other specialized groups.

764. Pattern Design and Draping. 5 hours.

Prerequisite: CTI 321 or 565/765.

Making and using a master pattern in designing and constructing garments; emphasis on artistic effects in color, line and texture.

765. Techniques in Construction on Current Fabrics. 5 hours.

Prerequisite: CTI 122 and 320-320L.

Planning, constructing, and evaluating garments and techniques using knits and specialty fabrics, such as suede, furs, and vinyls. Designed for majors in clothing and textiles, home economics education, and county extension home economists.

770. Behavioral Design Analysis. 5 hours.

Prerequisite: CTI 378 and 478/678.

An in-depth study into the physical psychological and sociocultural needs of the individual and the family unit as related to satisfaction with interior design components.

771. Furnishings and Interiors for Various Income Levels. 5 hours.

Prerequisite: CTI 378 and 475/675 and 477/677 or permission of department.

Planning furnishings for various levels of family income with emphasis on low income families. Study of available space in floor plans and the selection of materials, construction, design, durability and cost of furnishings for the available space using limited economics resources. Designed for majors in furnishings and interiors, interior design, housing or home economics education.

772. Furnishings Manufacturing and Retailing Industries. 5 hours.

Prerequisite: Permission of department.

The design, construction and cost of current furnishings related to manufacturing and retailing processes. Field trips to representative manufacturing plants, retail stores, the Atlanta Merchandise Mart, and plants in High Point, North Carolina.

775. Methods and Techniques of Furnishings and Interior Display. 5 hours.

Prerequisite: CTI 475/675 and 476/676 and 477/677 or permission of department.

Planning, executing, and evaluating illustrative materials and techniques in furnishings for promotional or informational purposes. Individual and group work on two and three dimensional displays. Designed for majors in furnishings and interiors, housing, home economics education and business home economists.

777. Problems in Practical Home Furnishings. 5 hours.

Prerequisite: 20 hours of graduate credit and permission of department.

Problems in practical home furnishings for advanced students. Independent study and emphasis on research is employed for solutions to design problems and explorations and experiments in techniques in refinishing furniture, window treatment construction and upholstering, and refurbishing the home.

810ABCDE. Clothing, Textiles and Furnishings Seminar. 2 hours each.

Prerequisite: Permission of department.

Critical analysis of research and theory in clothing, textiles and furnishings. Intensive reading and discussion of selected topics to be presented by advanced students, faculty, and guest speakers.

815. Historic Costume and Textile Conservation. 5 hours.

Prerequisite: CTI 464/664 or 465/665 and 520/720 and 525/725.

Application of conservation techniques to historic costumes and textiles.

820. Environmental Aspects of Textiles. 5 hours.

Prerequisite: CTI 561/761.

Detailed analysis of environmental issues related to textile manufacturing. Examination of water, air, noise and solid pollution controls and legislation and their impact on the textile industry.

840AB. Experimental Textiles. 5 hours each.

Prerequisite: CTI 325 and 420/620 and STA 421/621.

Experimental designs, test methods, treatment of data and interpretation of results applied to individual textile research problems. Specialized techniques and selected textile experiments.

860ABCDE. Contemporary Topics in Clothing, Textiles and Furnishings. 3 hours each.

Prerequisite: Ten hours in upper division clothing and textiles.

Analysis of current specialized topics in textiles, clothing and furnishings. Focus on economic, environmental and social factors related to textiles, clothing and furnishings.

865. Clothing and Textile Problems. 5 hours.

Two lectures, laboratories arranged.

Prerequisite: CTI 321 and one other approved CTI senior division course.

New developments in textile products; new techniques in clothing construction; trends in clothing selection. Individual problems based on students' professional needs.

867. Clothing, Textile and Interiors Research Methods. 5 hours.

Prerequisite: CTI 810A-E or 860A-E.

The philosophy of research applicable to clothing, textile and interiors studies; methodology and interpretation of research literature.

901. Special Problems in Clothing, Textiles, Interiors and Furnishings. 1-20 hours.

Prerequisite: Permission of department.

Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirements.)

921. Problems in Home Economics. 5 hours.

Prerequisite: Three graduate courses in CTI and permission of department.

The course is designed to provide individual guidance in the development of a significant project related to the student's field of work. A written report of the problem of project will be required.

930. Thesis. 5-50 hours.

FOODS AND NUTRITION (FDN)

626. (FS) Sensory Principles and Practices. 5 hours.

See FS 626.

627. Cultural Aspects of Foods and Nutrition. 5 hours.

A study of the foodways, food habits and food behavior of various population groups in this country and others and the influences of these factors on the nutritional status of group members.

641. Advanced Nutrition I. 5 hours.

Prerequisite: FDN 351 and VPH 310 and BCH/BIO 310.

Survey of the literature of human nutrition (in-

cluding physiology, biochemistry and endocrinology) related to the major nutrients, with special emphasis on the relationship between diet and performance under varying conditions of age and health.

642. Advanced Nutrition II. 5 hours.

Prerequisite: FDN 441/641.

Survey of the literature of human nutrition (including physiology, biochemistry and endocrinology) related to the vitamins and inorganic nutrients, with special emphasis on the relationship between diet and performance under varying conditions of age and health.

650. Food Theory and Application. 5 hours.

Prerequisite: CHM 261 or equivalent.

Study of physical and chemical properties and changes in foods that influence quality of foods and food products. Experimental methods used in preparation of confections, gels, fruits and vegetables, baked products and meats.

651. Safety and Efficacy of Food Additives. 5 hours.

Prerequisite: FDN 306 or 350 and 351.

A study of food products currently used for human consumption in the home and in quantity food service; criteria for evaluating new food items and the effects of new processes on edible quality and nutritive value.

653. Nutrition in Disease. 5 hours.

Prerequisite: FDN 441/641.

Modifications needed in normal diet in treatment of various diseases. Special emphasis is given to the study of digestive diseases, metabolic disorders, diseases of the blood and to cardiovascular and renal disorders.

655. Maternal and Child Nutrition. 5 hours.

Prerequisite: BCH/BIO 310 and ZOO 213 or VPH 310, and FDN 351.

Fundamental principles of nutrition during pregnancy, lactation, infancy and early childhood. Laboratory work in maternity clinics, infant laboratory, nursery schools, and other appropriate community agencies.

658. Readings in Nutrition. 5 hours.

Prerequisite: FDN 442/642 or permission of department.

Recent developments and the present status of knowledge on selected topics from the field of nutrition. The course is designed specifically for those who wish to bring their knowledge of nutrition up to date.

690. (CFD/CTI/HMC) Research in Home Economics. 5 hours.

See CFD 690.

700. Nutrition Related to the Human Life Cycle. 5 hours.

A survey of nutritional health needs related to specific stages of the human life cycle. Special emphasis will be given to the nutritional needs during pregnancy, infancy, and early childhood, and the gerontological-nutritional needs. The subject matter of the course will be presented for non-majors in foods and nutrition.

701. Consumer Aspects of Seafood Handling, Preparation and Marketing. 5 hours.

Prerequisite: FDN 210 and 350.

Techniques for the home economist handling, preparing and marketing seafood.

755. Catering. 5 hours.

Prerequisite: FDN 350.

Types of catering: establishing types of catering businesses, menu planning, food preparation, styles of service, cost accounting and resource management for the service of food to large and small groups of people. Actual catering of a meal is included.

757. Demonstration Techniques. 5 hours.

Prerequisite: FDN 350.

Planning and organizing effective types of communications about food and nutrition to the consumer through various types of media. Use of techniques such as food demonstrations, construction of displays and writing of brochures will be performed by students.

761. Computer Applications in Nutrition. 5 hours.

Prerequisite: FDN 453/653.

Corequisite: FDN 453/653.

Lecture and laboratory experience using computer procedures of importance in dietetic and community nutrition. Procedures, operating on large computer and/or microcomputers, concern nutrient evaluation of diets, study and description of eating habit patterns, dietary guidance of clinical patients and management of institutional food service.

770. Quantity Food Production. 5 hours.

Prerequisite: FDN 350.

Application of principles of food preparation in large quantities utilizing institutional equipment and procedures; including topics such as: yield studies, work improvement methods, and recipe standardization.

773. Institutional Management I. 5 hours.

Prerequisite: FDN 570/770.

The study of food service management: tools of management, staffing, and delivery systems as they pertain to the management and organization of public and private food

service in institutions, such as hospitals and schools.

774. Purchasing for Institutional Food Service. 5 hours.

Prerequisite: FDN 350.

A study of the total purchasing process with emphasis on purchasing methods, storage and issuing procedures, inventory systems, forecasting of quantities and specification writing. Purchase of food, beverages, chemicals, disposables, table service and small equipment is included.

775. Institutional Management II. 5 hours.

Prerequisite: FDN 570/770.

A study of the layout, design, equipment selection and purchase necessary to establish a food service facility. Energy use and conservation involved in a food service facility. Overall operational cost involved in operating a food service facility and the maintenance of records and cost controls. Laws and regulations pertaining to the operation of a food service facility.

791. Foods and Nutrition Practicum. 5 hours.

Prerequisite: Basic courses in FDN department and permission of department.

Supervised work experience in dietetics and/or food service facility.

850. Seminar in Foods and Nutrition. 5 hours.

Prerequisite: One advanced course in the subject area.

Survey of current literature on selected topics in food and nutrition. Organized to use classic studies as background material for each topic.

851. Metabolic Controls in Nutrition. 5 hours.

Prerequisite: FDN 442/642 and BCH 402/602, and a course in human physiology.

A presentation of regulatory mechanisms of nutrition and metabolism including discussions of current theories on endocrine controls and their dysfunction in human health.

852. Nutritional Aspects of Growth and Development. 5 hours.

Prerequisite: BCH 402/602 and FDN 441/641 and 442/642.

A presentation of basic mechanisms of tissue and cellular development during prenatal and neonatal periods of growth, including current concepts of nutritional and hormonal regulation of cellular proliferation and differentiation. Critical evaluation of original research techniques and approaches in current literature.

854. Special Topics in Foods and Nutrition. 5 hours.

Prerequisite: One graduate course in FDN and permission of department.

Individual investigation of problems related to foods, such as food habits, historical facts, experimental problems in cookery. Designed to develop initiative in the student seeking and/or compiling information.

857. Introduction to Research Methodology. 1-10 hours.

Prerequisite: Graduate standing in Foods and Nutrition or permission of department.

A systematic laboratory experience designed to provide the student first hand acquaintance with a wide variety of laboratory methods important in foods and nutrition research (involving humans and/or laboratory animal nutrition, and important in quantitative studies involving human food preparation and evaluations).

858ABCD. Research in Foods and Nutrition. 5 hours each.

Prerequisite: One graduate-level course in the subject area; admission to candidacy for advanced degree in foods and nutrition; permission of department.

The planning and conducting of an individual research problem under supervision.

859. The Nutritional-Metabolic Parameters of Gerontology. 5 hours.

Prerequisite: FDN 442/642 or equivalent and BCH 401/601 and 402/602 or equivalent.

A study of the nutritional-metabolic interrelationships affecting the onset and progress of "agedness" in human population groups. The course will include a review of the current experimental approaches, a detailed literature survey and student reports on specific aspects of nutrition related to gerontology.

901. Independent Study in Foods and Nutrition. 1-20 hours.

Prerequisite: Permission of department.

Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirements.)

921. Problems in Home Economics. 5 hours.

Prerequisite: Three graduate courses in FDN and permission of department.

The course is designed to provide individual guidance in the development of a significant project related to the student's field of work. A written report of the problem or project will be required.

930. Thesis. 1-15 hours.

HOUSING, HOME MANAGEMENT AND CONSUMER ECONOMICS (HMC)

650. (CFD) Second Half of Life. 5 hours.

Prerequisite: Ten hours of sociology, psychology and/or child and family development.

A review of the second half of life: resource management, living patterns and housing, sexuality, roles, family relationships, community and organization involvement, career opportunities.

661. Aged as Consumers. 5 hours.

Prerequisite: HMC 364 and ten hours of economics or permission of department.

The course will be concerned with the economic status, patterns, vulnerability, management practices of older persons, and with major consumer legislative acts.

664. Family Social and Economic Systems. 5 hours.

Prerequisite: ECN 105 or 106 and SOC 105 or one senior division course in related field.

Systems analysis of research on the family as an income producing and income utilizing unit; application of sociological theory and research to economics of the household; implications on family structural characteristics on the family as supplier and demander of inputs and outputs in relation to economic systems, and feed back consequences for families.

665. Family Consumer Systems. 5 hours.

Prerequisite: ECN 105 and SOC 105 or one senior division course in related field.

Social systems analysis of research on consumer activities of households, families, and individuals; examination of empirical research and theory on the consumer at micro and macro levels; suggested new directions for consumer research and theory with family focus.

671AB. United States Study Tours in Housing. 5 hours each.

Prerequisite: One upper division housing course or permission of department.

A systematic study of housing types, conditions and developments in selected areas of the United States. Sites which feature varying residential types and housing manufacturing plants will be visited.

672AB. Foreign Study Tour in Housing. 5 hours each.

Prerequisite: One upper division housing course or permission of department.

An on-site study of historical and contemporary housing types, conditions and developments in selected areas outside the United States.

680. Housing Developments. 5 hours.

Prerequisite: HMC 386 and five hours each of sociology and economics or permission of department.

Development of modern housing as related to family welfare; to health, safety, delinquency, social progress. A survey of housing problems; development of legislation; policies and programs; social and economic trends.

681. Housing for the Aged. 5 hours.

Prerequisite: Ten hours of housing courses. Housing needs and conditions, housing alternatives, legislation and current programs related to housing aged persons. Survey of current housing compared to proposals for effectively meeting more of the housing needs of the aged person.

687. Housing Design Principles. 5 hours.

Prerequisite: CTI 375 and HMC 386. A course in the principles of housing design and construction including drafting, residential construction and design, and professional relationships with architects and interior designers.

690. (CFD/CTI/FDN) Research in Home Economics. 5 hours.

See CFD 690.

700. Consumer Legislation. 5 hours.

Prerequisite: Two upper division courses in related areas.

The rights and responsibilities of consumers related to legislation concerning consumer information, product safety, choice of goods and channels of appeal for the consumer.

746. Household Equipment Testing. 5 hours.

Prerequisite: HMC 343 and PCS 127. The operation, care and installation requirements of equipment; the measurement and testing of factors governing the efficiency of different types of equipment.

747. Residential Lighting. 5 hours.

Prerequisite: HMC 210 and CTI 210 and HMC 386 or CTI 378.

Residential application of lighting. Lighting principles and procedures and their application to various residential situations. New developments in lighting fixtures and lighting design.

764. Family Financial Counseling. 5 hours.

Prerequisite: HMC 364 or permission of department.

Case study and practicum experiences related to financial counseling for families.

768. Management for Disadvantaged Families. 5 hours.

Prerequisite: HMC 368 or HMC 867 and permission of department.

Study of the life styles and instrumental functioning of families handicapped by limited cultural, mental, economic and physical resources. Unique managerial needs of disadvantaged families will be explored.

770. The Consumer and the Market. 5 hours.

Prerequisite: ECN 105.

Problems of the household buyer; intelligent selection of goods on modern market; standards and labeling as safeguards in buying; family income and problems in distribution.

771. Housing Alternatives. 5 hours.

Prerequisite: HMC 480/680 or equivalent or permission of department.

Analysis of housing types for low-income families. Public and private efforts to meet the housing needs of families with limited resources.

776. Advanced Family Finance. 5 hours.

Prerequisite: HMC 364 or equivalent.

Personal and family financial planning. Family values in relation to family income, spending, saving, and investing; advanced analysis of the effect of the economy on family financial planning; retirement plans and social security; insurance; home ownership and housing.

791. Housing, Home Management and Consumer Economics Internship. 5-15 hours.

Prerequisite: Basic courses in HMC and permission of department.

Supervised work experience in housing, household equipment, home management or consumer economics.

810. Research in Housing, Home Management or Consumer Economics. 5 hours.

Prerequisite: At least two senior division courses in housing, home management, consumer economics or related fields.

Investigation of research findings. Identification of concepts and theories relevant to housing, home management or consumer economics.

860. Readings in Family Economics. 5 hours.

Prerequisite: HMC 364 and ECN 133 and 134 or 105 and 106 and HMC 576/776.

Survey of current and classical research in family financial management; examination of nature of family financial problems under changing economic conditions; selected topics of special interest.

HORTICULTURE (HOR)

Charles Hendershott
(Plant Sciences Building, South Campus)

The Department offers graduate work leading to the Master of Science and the Doctor of Philosophy degrees in horticulture with majors in fruit crops, vegetable crops, ornamentals, and floriculture. Within a major, the main areas of specialization are plant breeding, anatomy, physiology, post-harvest physiology, nutrition, biochemistry, weed control, water relations, and product utilization. The facilities available for graduate training include three research centers, three state experiment stations, and cooperative work is available with three federal research laboratories. These facilities are well equipped and represent the climatic areas of the state.

Graduate work in this department is designed to develop a high order of independent thought, broad knowledge, and technical skills. The emphasis in graduate work is placed on research, supplemented by courses and seminars.

The program for either graduate degree is planned on an individual basis by the student and his major professor. Admission status, credit requirements, transfer credits accepted, academic standards, residence requirements, and time limit conform to regulations as given by the Graduate School and the College of Agriculture.

Students working towards a PhD degree are required to have a reading knowledge of French, German, Russian, or Spanish. A student from a foreign country may not offer his native language.

602. Advanced Pomology. 5 hours.
Prerequisite: HOR 300.

The physiological principles underlying the production of fruit and nut crops and small fruits with review of experimental evidence. Emphasis placed on varietal selections, site selection, and current cultural practices.

604. Advanced Olericulture. 5 hours.
Prerequisite: HOR 300 and BOT 423/623.
Principles and perspectives of vegetable crop production with emphasis placed on current cultural practices and environmental influences.

861. Readings in Home Management. 5 hours.
Prerequisite: Permission of department.
Critical review of research and other literature concerned with issues and concepts in home management.

866. Survey of Home Management Concepts. 5 hours.

Prerequisite: HMC 368 and 369 or equivalents.
Survey of basic concepts and theoretical framework for home management courses; summary of historical trends and needs for future research in home management.

867. Management Problems in Homes. 5 hours.

Prerequisite: HMC 364 and 368 and 576/776.
A study of the processes of decision-making in realization of values and goals through the effective use of human and material resources. The family is regarded as the focal point in this approach.

869. Survey of Home Management Programs. 5 hours.

Prerequisite: HMC 368, 369 or equivalents.
Comprehensive survey and evaluation of educational experiences in current home management programs, and identifications of present needs in the field.

901. Independent Study in Housing, Home Management and Consumer Economics. 1-20 hours.

Prerequisite: Permission of department.
Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirement.)

921. Problems in Home Economics. 5 hours.
Prerequisite: Three graduate courses in HMC and permission of department.

The course is designed to provide individual guidance in the development of a significant project related to the student's field of work. A written report of the problem or project will be required.

930. Thesis. 1-15 hours.

605. Greenhouse Management I. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 300, 315, 325.

A study of the principles and practices involved in the production of greenhouse pot plants, bedding plants and a few selected cut flowers. Special emphasis is given to nutrient practices, the effects of growth regulators and post-harvest handling and storage practices of floricultural crops.

606. Greenhouse Management II. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 405/605.

A study of commercial greenhouse crop production practices with special emphasis on pot plant production techniques, plant nutrition, fertilizers, and the use of growth regulators. Students will be personally responsible for the culture of a floriculture crop in the greenhouse.

607, 608. Special Problems in Horticulture. 2-5 hours each.

Prerequisite: 10 hours senior courses in horticulture.

This course is designed for the student who wishes to carry out a research or technical problem of special interest under direction of a staff member.

611. Plant Nutrition. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: BOT 423/623 and 380.

Principles and perspectives of plant nutrition. Emphasis is placed on the "initial" or "acquisitive" aspects of plant nutrition. This course deals in the main with the mineral nutrition of higher green plants. This course is designed to allow a student to deal with problems encountered by plants as they mine the environment through a sound knowledge of the science of plant nutrition.

621. Postharvest Physiology of Horticultural and Agronomic Crops. 5 hours.

Prerequisite: BOT 380.

A study of functional processes in fruits, vegetables, nuts, seeds, cut flowers and intact plants after they have been harvested. These processes include catabolic and anabolic metabolism, anatomical changes and pathological responses. Transportation, refrigeration, controlled atmospheres, drying and packaging principles are also covered.

630. Plant Protection Laboratory. 2 hours. Two 2-hour lab periods.

Prerequisite: PAT 353 and ENT 374.

The application of pesticides for the control of insects, diseases, weeds, and other crop pests. Special attention is given to application equipment and principles.

666L. (AGY) Methods for Soil Testing and Plant Analysis. 2 hours.

Prerequisite: CHM 112 or 122.

Corequisite: AGY 466/666.

Laboratory exercises in the collection, preparation and elemental assay of soils and plant tissue for nutrient element evaluation.

800. Horticultural Seminar. 1 hour. One hour lecture per week.

Required of all graduate students in horticulture. Open to all students in related fields. Attendance without registering for credit is permitted. Papers on selected topics to be presented by advanced students, faculty members and guest speakers.

804. Heavy Metals in the Soil and Plant Environment. 5 hours.

A study of the chemistry of heavy metals deposited on soils, their effect on plant growth and introduction into the food chain by plant uptake.

808. Horticulture Research. 5 hours.

This course is designed for graduate students who wish to carry out advanced research not covered in their thesis topic under the supervision of a staff member.

813. Production Practices Affecting the Utilization of Horticultural Crops. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: BOT 380.

A study of the principles of plant nutrition with emphasis on the theories of ion absorption, function of nutrient ions and nutrient effects on plant composition.

815. Growth and Development of Horticultural Crops. 5 hours. Five 1-hour lectures per week.

Prerequisite: BOT 380 or permission of department.

A discussion of growth and development of economic plants with emphasis on the physiological processes of growth, translocation, growth regulators, juvenility, maturity, senescence, floral initiation and development, fruiting, tuber and bulb formation, vernalization, dormancy, rest, and seed germination.

820. Instrumental Methods for Soil and Plant Analysis. 2 hours. Two 1-hour lectures per week.

Presentations on the principles for methods and techniques on the elemental assay of soils, soilless mixes and plant tissues used for diagnostic evaluation of nutritional status. Topics covered are principles of sampling, sample preparation and laboratory analysis using procedures in common use in soil testing and plant analysis laboratories.

820L. Instrumental Methods for Soil and Plant Analysis Lab. 3 hours. One 4-hour lab per week.

Prerequisite: Permission of department.

Conduct field and laboratory exercises in the sampling, sample preparation and elemental assay of soils, soilless mixes and plant tissues using procedures in common use in soil testing and plant analysis laboratories.

821. Advanced Post-Harvest Physiology. 5 hours.

Prerequisite: HOR 421.

Analysis of current theories and research on exogenous and endogenous factors controlling the post-harvest biology of plants and plant products.

930. Thesis. 1-15 hours.

JOURNALISM AND MASS COMMUNI- CATION (JRL)

J. Thomas Russell
(*Journalism Building, North Campus*)

The graduate studies program of the Henry W. Grady School of Journalism and Mass Communication offers two graduate degrees for students preparing for professional and academic careers: the Master of Arts degree in journalism, and the Doctor of Philosophy degree in mass communication.

The PhD program is designed to produce critical scholars capable of independent and original research. The program offers advanced study and specialization in preparing for careers in teaching and research or for position of responsibility in the mass media, business, industry, and government.

The master's program provides advanced work and specialization for professional careers in advertising, broadcasting, newspapers, magazines, and public relations, including teaching and research.

Applicants accepted for the master's program may begin their studies at the start of any quarter. All PhD students begin their programs in the Fall quarter.

Admission is based on undergraduate grade point average, the results of the Graduate Record Examinations (GRE) and letters of recommendation, as well as previous professional experience and scholarly work.

Anyone holding a bachelor's degree from an accredited college or university is eligible to apply for admission.

The program is open both to students with undergraduate majors in journalism and mass communication and to those who have majored in other areas. Master's students without backgrounds in journalism normally take at least 30 credit hours (two quarters) of undergraduate-level journalism foundation courses before registering for more than 10 hours of graduate courses. If not previously completed, a basic course in statistics is also required.

Financial assistance for journalism and mass communication graduate students is available through a variety of sources, including school assistantships, university assistantships, fellowships, scholarships, loans, and student employment.

Applications and additional information may be obtained from the Graduate Studies Office, School of Journalism and Mass Communication.

704. Law of Communication. 5 hours.

Prerequisite: JRL 101 and one of the following: JRL 260, 301, 310, or 385.

A broad application of principles of law to the mass communication media, media practice, advertising, and freedom of information, including libel, contempt of court, right of privacy, copyright, and postal laws.

708. International Mass Communications. 5 hours.

Prerequisite: JRL 101.

A course designed to help students gain an understanding of the mass media of the world—what they are like, how they operate, and what impact they have. Philosophies of different systems will be compared, as well as efforts at development or regulation of these systems. Attention will be given to print and electronic media and to international news agencies.

713. Telecommunication Regulation. 5 hours.

A survey of regulatory agencies concerned with telecommunication (radio, television, cable), important regulatory principles from law, regulatory practice, and common law. Emphasis will be upon the regulatory issues faced by the professional in telecommunication, including the development and use of self-regulatory codes.

714. Television Production I. 5 hours.

Prerequisite: JRL 383 and 384.

Theory and application to visual/aural telecommunication principles to informational messages. Student productions will be prepared, critiqued, and tested.

716. Television Production II. 5 hours.

Prerequisite: JRL 514/714.

An advanced study of television directing with special emphasis on the aesthetics of the medium. The student will work in a full-color studio and will utilize the television equipment for a means of communicating effectively with the television medium.

717. Advanced Studies in Mass Communication. 1-5 hours.

Prerequisite: Permission of school.

Independent study or special projects in any area of mass communications for majors in the School of Journalism and Mass Communication. Written proposal outlining the work to be undertaken must be submitted and receive the instructor's approval before the student will be permitted to register for the course. Students will be responsible for insuring the funding of their projects.

718. Audio Production I. 5 hours.

Prerequisite: JRL 384.

Theory and application of sound recording in message preparation. Acoustics, microphone selection and placement, editing and mixing in both studio and field settings will be subjects of discussion and laboratory sessions.

720. (SPC) Communication Theory. 5 hours.

See SPC 720.

722. (SPC) Mass Communication and Persuasion. 5 hours.

Prerequisite: JRL 101 or two senior level courses in psychology, sociology, or speech communication.

An examination of approaches utilized to investigate mass communication as a persuasive process. The history of theoretical and empirical development in this area as well as recent developments are studied with particular focus on attitude change through communication; the nature of communication in relation to institutionalized communications media; and the effects of persuasive communications on attitudes and opinions.

725. Broadcast Management I. 5 hours.

Prerequisite: JRL 301.

Theory and application of management practices in the administration of telecommunication businesses. Cost and revenue management, use of research, rate setting, capital and operations budgeting, personnel management, and program syndication.

726. Broadcast Management II. 5 hours.

Prerequisite: JRL 310 and 525/725 or permission of school.

A focus on the management of a broadcast station's inventory including the analysis of increasing revenues and productivity and serving client needs.

730. Public Affairs Reporting. 5 hours.

Prerequisite: JRL 260 and 351.

An advanced course in analyzing, interpreting and reporting governmental affairs at local, state, and national levels. Students cover assignments for student and professional media.

732. Public Opinion Reporting. 5 hours.

Prerequisite: JRL 260 and 351 or permission of school.

An examination of public opinion, its nature and study techniques, propaganda; and media interaction with society, with emphasis upon the measurement of public opinion and interpretation of data. Students will prepare reports of findings for publication in print and broadcast media.

735. Advanced Editing and Makeup. 5 hours.

Prerequisite: JRL 101, 260, 351.

A course in the planning and processing of special pages and sections of newspapers and magazines. Consideration is also given to legal and ethical problems and to the effects of technological developments on staff organization, production, and graphic design.

738. Contemporary American Magazines. 5 hours.

Prerequisite: JRL 101 or permission of school.

A survey of contemporary American magazines and their role in society. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography, and technology.

749. History of the Mass Media in the United States. 5 hours.

Prerequisite: JRL 101 or permission of school.

A survey of the mass media in the United States from the colonial period to the present. Special attention is given to newspapers, magazines, radio, and television and their relationship to the history and development of the nation.

753. Editorials and Issues. 5 hours.

Prerequisite: JRL 260 and 351.

A study of editorial policies, ethics, influence, and techniques. Students analyze, discuss, and write editorials about local, state, and national issues.

758. Magazine Article Writing. 5 hours.

Prerequisite: JRL 260 and 351 or permission of school.

A practical course in writing various types of articles and features for magazines, magazine sections of newspapers, and other periodicals.

759. Critical Writing and Reviewing. 5 hours.

Prerequisite: JRL 260 and 351.

A course in criticizing and reviewing books, plays, television, films, and other arts for newspapers, magazines, and related media.

760. Investigative Reporting. 5 hours.

Prerequisite: JRL 530/730 or equivalent.

Practice in and study of investigative, interpretative, and in-depth reporting for the mass

media. Students will develop reporting projects in the field of public affairs in keeping with their interests and background.

764. Newspaper Management. 5 hours.

Prerequisite: JRL 101.

A study of business and editorial management of daily and weekly newspapers, including circulation, advertising, and promotion.

767. Contemporary American Newspapers. 5 hours.

Prerequisite: JRL 101 or permission of school.

A study of the newspaper and its role in America today. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography, and technology. Leading papers in various sections are examined closely.

770. Advanced Projects in Magazines. 5 hours.

Prerequisite: JRL 558/758.

An independent projects course in magazines. Most projects are concerned with the writing of magazine articles, particularly series of articles. Students may select projects related to other phases of magazine production.

774. Advertising Campaigns. 5 hours.

Prerequisite: JRL 310, 311 and 312 or permission of school.

Planning, preparing, and presenting research, copy, and layout for a national advertising campaign. Class groups function as an advertising agency. Emphasis on media, copy, and marketing research.

779. Advanced Advertising Copy. 5 hours.

Prerequisite: Grade of B or better in JRL 311 and permission of school.

A continuation of JRL 311 with greater emphasis on creative writing and designing of advertising for national media. Strong emphasis is on individual projects in the form of a professional portfolio of creative efforts.

786. Film Production I. 5 hours.

Prerequisite: JRL 260 or 383 and 384.

Production for telecommunication using film and other portable production equipment. Students will participate in laboratory and field work.

788. Advanced Radio-Television News. 5 hours. Lectures and lab periods.

Prerequisite: JRL 381 and 586/786.

Advanced methodology in gathering and producing news for radio-television. Students will use sound film cameras and audio recording equipment. Analysis of news sources and problem areas unique to the broadcast journalist is emphasized.

791. Public Relations Administration. 5 hours.

Prerequisite: JRL 577/777.

A study of the operation and objectives of corporate public relations programs using the case study approach. Emphasis is given to relating the management function of decision-making and policy formulation to the communication process.

796. Film Production II. 5 hours.

Prerequisite: JRL 586/786.

Advanced theory and application of techniques of studio and second unit production of complicated entertainment and informational programming on film. Students will produce messages using advanced cinematographic techniques.

800. Proseminar in Mass Communication. 5 hours.

Survey of research and methodology in major areas of mass communication.

807. Seminar: Mass Media. 5 hours.

Examination and discussion of problems of mass media, their rights and responsibilities, control and support, and their role as social institutions. A special project, determined by the student's interest will be required.

808. Seminar: Public Opinion. 5 hours.

Study of patterns of opinion formation including their cultural, social, and economic impact. Analysis of communication content and techniques involving public opinion and persuasion. Student research projects will be developed, discussed and critiqued.

809. Seminar: Mass Communication in Contemporary Society. 5 hours.

A social, cultural, and economic analysis of the processes and effects of mass communications in contemporary society.

810. Seminar in Communication Research. 5 hours.

Historical and quantitative methods for research in communication with an introduction to experimental and survey design, and statistical analysis.

811. Comparative International Communication Systems. 5 hours.

Study of patterns of mass communications throughout the world; philosophies behind them; social, political and economic reasons why a given kind of pattern develops where it does; comparative analysis of operating procedures of various media, with emphasis on newspaper and broadcast media.

812. Seminar: Mass Communication History. 5 hours.

Prerequisite: Course in media history or permission of school.

Historical research method as applied to mass media. Examination of resources, emphasizing state and local holdings. Critical study of selected writing in media history. Development of student research projects.

813. Seminar: Mass Communication Law. 5 hours.

Prerequisite: Course in communication law or permission of school.

Communication law problems, issues, and research methods. Selected publications in the field will be examined and criticized. Student research projects will be discussed, developed and criticized.

814ABCD. Seminar: Problems in Mass Communication. 5 hours. (Max. 10 hours.)

Prerequisite: Ten hours of graduate credit.

Problems, issues and research in selected topic areas.

A. Radio-Television-Film

B. News-Editorial

C. Advertising

D. Public Relations

816. Mass Media Economics. 5 hours.

Prerequisite: ECN 545/745 or equivalent.

Study of the economic structure, policy, and behavior of mass media industries.

817. Mass Communication Theory. 5 hours.

Theory construction; cognitive processing of mass-mediated messages; social context of the media; institutional functions such as gate-keeping and agenda-setting.

830. Research and Readings in Mass Communication. 2-5 hours.

Prerequisite: Ten hours or more graduate credit and permission of school.

Directed reading and research in selected areas of mass communication. May be repeated, but not more than cumulative total of five hours permitted.

930. Thesis. 1-15 hours.

LINGUISTICS (LIN)

Jared Klein
(Park Hall, North Campus)

The program in Linguistics offers both PhD and MA degrees, as well as courses that support doctoral work in other majors. The MA degree is designed to provide students with a solid foundation in the basic areas of linguistic analysis (phonology, morphology, syntax, and semantics, and historical linguistics). The PhD degree provides specialized training in one of the three major tracks: Syntax, Semantics, and the Lexicon; Anthropological Linguistics (including Sociolinguistics); and English Linguistics. Students also select a minor concentration from among such diverse areas as Indo-European Linguistics, Germanic Linguistics, Romance Linguistics, Linguistic Theory, or either of the major tracks not chosen. Prospective candidates for the PhD degree must pass comprehensive examinations on a required 25 hour core of courses (LIN 615T, 630, 681, 682, and 669) as well as on their major and minor fields. Additional requirements include 10 hours of work in a non-Indo-European or non-Western language and a demonstrated reading knowledge of two of the following four modern foreign languages: French, German, Russian, Spanish.

Possibilities for financial aid include University-wide assistantships and a very small number of teaching assistantships in English, French, Spanish, and German. Students interested in the latter should so inform the department at the time of application.

600T. (ENG) History of the English Language. 5 hours.
See ENG 600T.

602T. (ENG) Dialectology. 5 hours.

The phenomena of regional and social linguistic variation among speakers of the same language are investigated, with reference to dialect studies of various aspects of several different languages.

604T. (ENG) The Structure of Black English. 5 hours.
History and structure of black English: theories of its origins: comparison with other

dialects of American English; identity of its speakers.

606T. (ENG) Old English. 5 hours.
See ENG 606T.

607T. (ENG) Middle English. 5 hours.
See ENG 607T.

611T. (ENG) English Grammar. 5 hours.
See ENG 611T.

613T. (ENG) English Grammar: Phonology and Morphology. 5 hours.
See ENG 613T.

614. (PHY) Introduction to Philosophy of Language. 5 hours.
See PHY 614.

614S. (SPA) Speech and Hearing Science. 5 hours.
See SPA 614S.

615T. (ENG) Transformational Syntax. 5 hours.
Study of techniques and formalisms for analyzing syntactic phenomena of human languages within the framework of transformational grammar. Examples will be drawn primarily from English.

619. History of Linguistics. 5 hours.
The development of linguistic thought from the Hellenic period to the twentieth century.

621. Introduction to Indo-European Studies. 5 hours.

The history and development of the Indo-European language family: the various early Indo-European dialects, their grammatical structures, and the evolution of those structures from the proto language.

630. Generative Phonology. 5 hours.
Prerequisite: ANT/LIN 481/681.

Study of techniques and formalisms for analyzing sound systems of languages by means of distinctive features.

638. (GER) Contrastive Grammar: German-English. 5 hours.
See GER 638.

642. (PHY) Set Theory and Logic. 5 hours.
See PHY 642.

643. (PHY) Symbolic Logic I. 5 hours.
See PHY 643.

646. (GER) Linguistic Structure of German. 5 hours.
See GER 646.

650. (SPA/PSY) Language Development. 5 hours.
See SPA 650.

660. (GER) History of the German Language. 5 hours.

See GER 660.

661. (SKT) Structure of Sanskrit I. 5 hours.

An introduction to the phonology, morphology, and syntax of the classical Sanskrit language, emphasizing the position of Sanskrit within the Indo-European language family and its importance for Indo-European linguistics.

662. (SKT) Structure and Sanskrit II. 5 hours.

Prerequisite: SKT/LIN 461/661.

Continued studies in both the synchronic and diachronic grammar of classical Sanskrit.

669. (ANT) Historical Linguistics. 5 hours.

Traditional methods of historical linguistics are reviewed with examples from several different language families. Various kinds of possible phonological and syntactic change are investigated in relation to modern linguistic theory.

671. Languages in Contact. 5 hours.

Prerequisite: ANT/LIN 480/680 or LIN 210 or 320H or permission of department.

The study of the influence of languages on other languages spoken in the same or neighboring areas, with consideration of interference in phonology, morphology, syntax, semantics and vocabulary.

680. (ANT) Introduction to Linguistics. 5 hours.

See ANT 680.

681. (ANT) Phonetics and Phonology. 5 hours.

See ANT 681.

682. (ANT) Linguistics: Morphology. 5 hours.

See ANT 682.

685. (ANT) American Indian Languages. 5 hours.

See ANT 685.

686. (ANT) Language in Culture and Society. 5 hours.

See ANT 686.

688. (ANT) Linguistics: Field Methods. 5 hours.

See ANT 688.

690. Topics in Indo-European Linguistics. 5-15 hours.

Prerequisite: Permission of department.

A study of the synchronic and diachronic grammar of an older Indo-European language not otherwise taught at the University. Possible offerings include Avestan, Hittite, Lithuanian, Old Church Slavic, and Old Irish. Occasionally other languages or topics, such as Indo-European Phonology, Morphology, or Syntax, may be covered.

700. (EEN) Language Acquisition and Development. 5 hours.

See EEN 700.

707. (EEN) English Language Studies for Teachers. 5 hours.

See EEN 707.

770F. (FR) History of the French Language. 5 hours.

See FR 770F.

770P. (POR) History of Portuguese Language. 5 hours.

See POR 770P.

770S. (SP) History of the Spanish Language. 5 hours.

See SP 770S.

805. Topics in Syntax and Semantics. 5 hours.

Prerequisite: LIN/ENG 411/611.

Study of a number of issues arising from the Standard theory of transformational grammar and of the various solutions which have been proposed to these issues.

810T. (ENG) Seminar in English Linguistics. 5 hours.

See ENG 810T.

811. Seminar in Syntactic Theory. 5 hours.

Prerequisite: LIN/ENG 411/611.

Comparison of current theories of syntax; research in selected syntactic problems.

819. (PHY) Seminar in the Philosophy of Language. 5 hours. (Max. 15 hours.)

See PHY 819.

832. (GER) Gothic. 5 hours.

See GER 832.

836. (SPA) Advanced Speech and Hearing Science. 5 hours.

See SPA 836.

840. (GER) Middle High German. 5 hours.

See GER 840.

848. Seminar in Semantics and Lexicography. 5 hours. (Max. 15 hours.)

Prerequisite: LIN/ENG 411/611.

This course will focus on some specialized aspects of semantics and lexicology/lexicography. Among the topics included from time to time will be speech acts, metaphor, semantic field theory, lexicology and lexicography, and contrastive studies in the lexicon.

849. (PHY) Seminar in Problems of Logic. 5 hours. (Max. 15 hours.)

See PHY 849.

870S, 871S. (SP) Introduction to Old Spanish. 5 hours each.

See 870S, 871S.

881. (PSY) Language and Reality. 5 hours.
See PSY 881.

882. (PSY) Psycholinguistics. 5 hours.
See PSY 882.

886. (PSY) Cognitive Development. 5 hours.
See PSY 886.

887. (ANT) Seminar in Language, Culture, and Society. 5 hours. (Max. 15 hours.)
See ANT 887.

888. (ANT) Seminar in Anthropological Linguistics. 5 hours. (Max. 15 hours.)
See ANT 888.

889. (ANT) Linguistics: Advanced Field Methods. 5 hours.
See ANT 889.

889B. (PSY) Seminar in Developmental Processes. 5 hours.
See PSY 889B.

890. (ROM) Romance Linguistics. 5 hours.
Prerequisite: At least 20 hours in one Romance language or by permission of department.
An introduction to Romance linguistics with treatment of the structure and development of the various Romance languages as well as dialectology, linguistic geography and the application of structural linguistics to Romance languages.

891. Seminar in Indo-European Linguistics. 5 hours. (Max. 15 hours.)
Prerequisite: CLC/LIN 410/610 or SKT/LIN 462/662 or LIN 490/690. Reading knowledge of French and German.

Investigation of important problems in Indo-European Linguistics at an advanced level. The topics will vary from time to time and may include Indo-European phonology, morphology, syntax, and the lexicon.

900. Directed Readings in Linguistics. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
An advanced course designed to allow the student to investigate various linguistics topics. A term paper will be required each time the course is elected.

903. Research in Linguistics. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.
Individually directed study under faculty supervision on a research problem in Linguistics. To be elected by students initiating research on a potential thesis topic prior to admission to candidacy and/or the end of their program of graduate coursework.

930. Thesis. 1-15 hours.

SANSKRIT (SKT)

661. (LIN) Structure of Sanskrit I. 5 hours.
See LIN 661.

662. (LIN) Structure of Sanskrit II. 5 hours.
See LIN 662.

MATHEMATICS (MAT)

Ray A. Kunze

(Boyd Graduate Studies Building, South Campus)

The Department of Mathematics offers the MA degree and the PhD degree. Students who are working on the MA degree may choose to major either in Mathematics (thesis option) or in Mathematics-Non Thesis. The department, along with the Department of Statistics and Computer Science and the College of Business Administration, also offers a professional master's degree, Master of Applied Mathematical Sciences. The department also cooperates with the College of Education in the MEd degree with a major in mathematics education and the EdD degree with a major in mathematics education.

Doctoral language requirement: two foreign languages (French, German or Russian).

601. Differential Equations. 5 hours.

Prerequisite: MAT 254.

Elementary differential equations with applications to geometry and physics. Intended for students in agricultural engineering.

603. Numerical Analysis I. 3 hours.

Prerequisite: MAT 255, CSC 500/700 or STA 431. Recommended corequisite: MAT 256.

Iterative techniques for the numerical solution of nonlinear equations; polynomial interpolation; numerical integration; error analysis; digital computer problems and applications.

604. Numerical Analysis II. 3 hours.

Prerequisite: MAT 403/603. Recommended corequisite: MAT 358.

Numerical solution of systems of linear equations, matrix inversion, eigenvalues, numerical solution of ordinary differential equations, and digital computer applications.

605. Numerical Analysis III. 3 hours.

Prerequisite: MAT 404/604.

Iterative methods for the solution of systems of nonlinear equations; splines; linear and convex programming; digital computer applications.

610, 611, 612. Advanced Calculus. 3 hours each.

Prerequisite: MAT 255 and 256.

The concepts, methods and applications of advanced multivariable calculus. Partial differentiation, implicit functions, multiple integrals, line and surface integrals, differential forms and the classical integral theorems of vector analysis, Infinite series, Fourier series, improper integrals, and special functions. The calculus of variations. This course emphasizes the conceptual understanding of multivariable calculus that is required for the solution of concrete problems and applications to other areas.

614, 615, 616. Introductory Topology. 3 hours each.

Prerequisite: MAT 255.

An introductory course in point set topology.

617. Techniques of Advanced Calculus. 3 hours.

Prerequisite: MAT 255 or permission of department.

Intended for non-mathematics graduate students needing to strengthen their calculus background, such as those preparing to take advanced statistics courses. Topics include review of elementary calculus, improper integrals, Gamma and Beta functions, maxima and minima of functions of several variables, Lagrange multipliers, multiple integrals, Jacobians, and other selected topics.

620, 621, 622. Introduction to Methods of Applied Mathematics. 3 hours each.

Prerequisite: MAT 255 and 358.

The construction of mathematical models for applied problems in terms of ordinary and partial differential equations. The standard methods for the solution of the boundary value problems and partial differential equations of applied mathematics. Solution by series, Fourier series, Bessel functions, Legendre polynomials. Laplace and Fourier transforms. Variational methods. Complex variable techniques. This course emphasizes the use of advanced mathematical methods for the solution of "real world" problems from a variety of scientific areas.

623. Mathematical Models in Biology I. 3 hours.

Prerequisite: MAT 253, 254.

Construction, use and evaluation of mathematical models for the biological sciences. Compartmental flow models, dynamic system models, discrete and continuous models, deterministic and stochastic models. Emphasis on construction and use of models by students in their own research. (Not for graduate credit for mathematics majors)

624. Mathematical Models in Biology II. 3 hours.

Prerequisite: MAT 423/623.

A continuation of MAT 623, studying specific models and related mathematics more thoroughly, as determined by the interest of those enrolled. More emphasis on model use and evaluation. (Not for graduate credit for mathematics majors.)

627. Discrete Models. 3 hours.

Prerequisite: MAT 256 and 442/642.

An introduction to the theory of directed graphs with applications to the social and biological sciences.

628. Discrete Models. 3 hours.

Prerequisite: MAT 427/627.

Applications of graph theory to traffic flow, ecology, energy.

629. Discrete Models. 3 hours.

Prerequisite: MAT 428/628.

The mathematics at individual and group decision-making. Arrow's theorem, utility functions, expected utility, conjoint measurement.

631. Theory of Numbers. 5 hours.

Prerequisite: MAT 254.

An elementary course in number theory.

632. Theory of Numbers II. 5 hours.

Prerequisite: MAT 431/631.

A continuation of MAT 631.

635, 636. Elementary Differential Topology. 3 hours each.

Prerequisite for 635: MAT 255 and 256 and 414/614; For 636: MAT 435/635.

Differential calculus in $\mathbb{R}^n$, manifolds in Euclidean space. Fundamental ideas of transversality, homotopy, and intersection theory. Differential forms, integration on manifolds, Stokes' theorem, deRham cohomology. Topics from differential geometry.

640. Introduction to Higher Algebra. 3 hours.

Prerequisite: MAT 256.

An introductory course in group theory. Examples of groups, subgroups, quotient groups, homomorphism theorems, permutation groups.

641. Introduction to Higher Algebra. 3 hours.

Prerequisite: MAT 440/640.

An introductory course in ring and field theory. Examples of rings, ideals, quotient rings, homomorphism theorems, polynomial rings, field extensions, constructible numbers, some Galois theory.

642. Introduction to Higher Algebra. 3 hours.

Prerequisite: MAT 441/641.

A course in the theory of vector spaces and linear transformations. A more rigorous and deeper treatment than MAT 256. Basis and dimensions of vector spaces, characteristic roots, vectors and equation of a linear transformation, canonical forms, and determinants.

645. Applied Linear Algebra. 3 hours.

Prerequisite: MAT 256.

A course treating those aspects of linear and matrix algebra found to be frequently useful in a variety of non-mathematical fields. Topics selected from: solution of systems of linear equations (direct and iterative); calculation of eigenvalues; generalized inverses; convexity; properties of non-negative matrices.

647. (CSC) The Design and Analysis of Computer Algorithms I. 3 hours.

Prerequisite: MAT 256, 358 or any programming course or experience.

Computer models, design of algorithms, sort/order Problems.

648. (CSC) The Design and Analysis of Computer Algorithms II. 3 hours.

Prerequisite: MAT/CSC 447/647.

Integer and polynomial arithmetic, pattern recognition, algorithms on graphs.

649. (CSC) The Design and Analysis of Computer Algorithms III. 3 hours.

Prerequisite: MAT/CSC 448/648.

Matrix operation, the fast Fourier transform, NP-complete problems, intractable problems.

653, 654, 655. Introduction to Analysis. 3 hours each.

Prerequisite: MAT 255.

An introductory course in functions of a real variable; elementary topology of metric spaces; continuous functions; differentiation and Riemann integration; measure theory and the Lebesgue integral.

659. Vector Analysis. 5 hours.

Prerequisite: MAT 255 and 256.

Calculus of vector functions. Line and surface integrals. Green's theorem, the divergence theorem, Stokes' theorem and physical applications. (Winter quarter.)

660. Elementary Differential Equations I. 3 hours.

Prerequisite: MAT 256 and 358.

Higher order linear differential equations. Laplace transform method, introduction to numerical methods, applications.

661. Elementary Differential Equations II. 3 hours.

Prerequisite: MAT 256 and 358.

Systems of first order linear differential equations, nonlinear differential equations and stability, applications to biological systems.

665. Introduction to Complex Variables. 5 hours.

Prerequisite: MAT 255.

Introductory course in complex variable theory with applications. (Spring quarter.)

667. Introduction to Combinatorics. 3 hours.

Prerequisite: MAT 256.

An elementary introduction to combinatorial thinking, including basic counting principles, binomial coefficients, and recurrence relations. This course is recommended for students in mathematics, computer science, and mathematics education.

671, 672, 673. (STA) Introduction to Probability Theory. 3 hours each.

Prerequisite: MAT 255.

Probability axioms, combinatorial analysis, random variables, univariate and multivariate distributions, expectation, conditional distributions, independence, law of large numbers and central limit theorems, random walks, Markov chains and processes, Brownian motion, branching and renewal processes, diffusion processes. Applications.

677. Mathematical Methods of Operations Research. 3 hours.

Prerequisite: MAT 256; Corequisite: A programming course.

This first of three quarters devoted to the mathematical methods of operations research is devoted to the theory and applications of linear optimization, including its foundations, the Simplex algorithm and duality.

678. Mathematical Methods of Operations Research. 3 hours.

Prerequisite: MAT 477/677 and 255.

Second quarter of sequence; devoted to non-linear programming, Kuhn-Tucker conditions, convex programming, quadratic programming, geometric programming; applications will be interspersed through development. No knowledge of computer programming needed in course. (Not for graduate credit for MAT majors.)

679. Mathematical Methods of Operations Research. 3 hours.

Prerequisite: MAT 478/678.

Third quarter in the sequence. Topics covered to be selected from the areas of integer programming, network flows and stochastic models.

702. Basic Ideas of Arithmetic. 5 hours.

Prerequisite: MAT 100 or two years teaching experience. Cannot be used as part of the major of 40 hours.

Designed to give elementary teachers a clear understanding of the fundamental ideas of arithmetic. Operations of arithmetic will be studied in several number systems.

703. Basic Ideas of Algebra and Geometry. 5 hours.

Prerequisite: MAT 502/702.

A continuation of MAT 502/702 designed to give elementary teachers a clearer understanding of some of the important ideas of algebra and geometry. For credit toward the Master of Education degree only.

704, 705, 706. Basic Ideas of Calculus. 5 hours each.

Prerequisite: MAT 254 or permission of department.

A brief survey of the principal ideas and techniques of calculus from a modern point of view. Intended as a refresher course for high school teachers who feel the need for an understanding of calculus in order to prepare their students for college work. For credit toward the Master of Education degree only.

710. Fundamental Ideas of Algebra. 5 hours.

Prerequisite: MAT 100-109 and either two mathematics courses numbered 200 or above or two years of teaching high school algebra. A course designed to help teachers of high school algebra. It will stress those fundamental ideas, some of which are modern, which determine the structure of elementary algebra.

714. Elementary Set Theory for Teachers. 5 hours.

Prerequisite: MAT 254 or two years experience as a mathematics teacher.

An elementary course in the theory of sets. Contains applications to topology. For credit toward Master of Education degree only.

716. Modern Algebra for Teachers. 5 hours.

Prerequisite: MAT 100-109 and either two mathematics courses numbered 200 or above or two years teaching high school algebra.

An introduction to matrices, vectors and linear programming. For credit toward Master of Education degree only.

720. Foundations of Geometry. 3 hours.

Prerequisite: MAT 100-109 or 116 or two years of teaching high school geometry.

A course in more advanced elementary geometry especially designed for prospective teachers of secondary school mathematics.

721. Advanced Topics in Geometry. 3 hours.

Prerequisite: MAT 520/720.

A continuation of MAT 520/720.

722. Transformation Geometry. 3 hours.

Prerequisite: MAT 520/720.

Transformation geometry.

756. Fundamentals of Probability and Statistics. 5 hours.

Prerequisite: Two mathematics courses numbered 200 or above or two years experience teaching high school mathematics.

Fundamental ideas of probability with particular emphasis on their application in statistics.

Unless otherwise stated the prerequisite to any 800 numbered course is three courses having MAT 254 as a prerequisite.

800, 801, 802. Real Analysis. 5 hours each.

Prerequisite: MAT 455/655.

Integration and measure, especially Lebesgue and Lebesgue-Stieltjes measure, Riesz Representation Theorem, differentiation of measures, product measures, L_p spaces, elementary theory of Hilbert and Banach spaces, Fourier transforms.

804, 805, 806. Methods of Applied Mathematics. 5 hours each.

Prerequisite: Undergraduate applied mathematics or permission of department.

Green's function methods, system theory, state space equations, generalized functions and equations of physics, generalized Fourier series and special functions, transform methods, differential and partial differential equations, wave equations, integral equations, asymptotic expansions and steepest descent methods, Pontrjagin's variational methods and control theory, generalized coordinate transformations, tensor calculus.

810, 811, 812. Point Set Theory. 5 hours each.

Separation axioms, compactness, local compactness, para-compactness, product topologies, metrization theorems, embeddings, retracts, extension theorems, fixed point theorems, quotient spaces, function spaces, fundamental groups, local connectedness, covering spaces, homotopy lifting property, simplicial homology and cohomology.

814, 815, 816. Analytic Functions of a Complex Variable. 5 hours each.

Cauchy-Riemann equations, Cauchy's Theorem and its consequences, residue theory, analytic continuation, harmonic functions, conformal mapping. Riemann Mapping Theorem, elliptic functions, Mittag-Leffler and Weierstrass Theorems, elementary theory of Riemann surfaces.

817, 818, 819. Probability Theory. 5 hours each.

Prerequisite: MAT 800, 801, 802.

The course assumes no knowledge of probability but a knowledge of measure theory. Probability is developed by the axioms of Kolmogorov. The course starts with the properties of distributions, characteristic functions, stochastic independence and the basic limit theorems. Then the strong limit theorems are discussed, accumulatively in a very general form of the Central Limit Theorem. The course concludes with the investigation of conditional expectation and martingale theory with their application to stochastic processes via Brownian motion.

822, 823. Algebraic Topology. 5 hours each.

Complexes, combinatory homology theory, function spaces, fiber spaces, covering spaces, homotopy groups, singular homology theory, exact couples, spectral sequences and applications.

830, 831, 832. Topics in Topology. 5 hours each.

A continuation of Point Set Theory. Selected topics in topology.

833. Advanced Numerical Analysis I. 5 hours.

Prerequisite: MAT 605 or permission of department. Recommended corequisite: MAT 453/653 or 410/610.

Existence, uniqueness and convergence theorems for linear and nonlinear systems of equations; algorithms for calculating eigenvalues and eigenvectors; digital computer applications.

834. Advanced Numerical Analysis II. 5 hours.

Prerequisite: MAT 833.

Numerical integration in one or more dimensions; numerical solution of ordinary and partial differential equations; numerical solution of integral equations; digital computer applications.

835. Advanced Numerical Analysis III. 5 hours.

Prerequisite: MAT 834. Recommended corequisite: MAT 465/665.

General interpolation and approximation theory; reminder theory; approximation of linear functionals; Hilbert space theory and applications to numerical analysis; digital computer applications.

840, 841, 842. Functional Analysis. 5 hours each.

Prerequisite: MAT 802 or permission of department.

Banach spaces, the three basic principles of

functional analysis; linear topological spaces, local convexity, and the Krein-Milman theorem; spectral theory for operators in Banach space, Riesz theory for compact operators; Hilbert spaces, spectral theorem for normal operators, an introduction to operator theory, application to operator equation.

843, 844, 845. Modern Algebra. 5 hours each.
Prerequisite: MAT 442/642.

Group theory, including the Sylow Theorems, Jordan Hölder Theorem and Fundamental Theorem of Finitely Generated Abelian Groups; ring theory, including ideal theory and Wedderburn's Theorem; field theory including Galois theory; advanced linear algebra.

860. Ordinary Differential Equations I. 5 hours.

Prerequisite: MAT 256, 455/655, or permission of department.

The basic theory of ordinary differential equations: existence and uniqueness of solutions Gronwall's Inequality, continuation of solutions, dependence on initial conditions and parameters, linear systems, Floquet Theory.

861. Ordinary Differential Equations II. 5 hours.

Prerequisite: MAT 860.

The basic qualitative theory of ordinary differential equations: autonomous systems, limit sets and limit cycles, Poincare-Bendixson Theorem, stability of periodic solutions, stationary points in the plane, perturbed linear systems, Wazewski's Theorem.

862. Ordinary Differential Equations III. 5 hours.

Prerequisite: MAT 861.

The classical second order theory: Sturm-Liouville boundary value problems, singular boundary value problems, use of Implicit Function Theorem and fixed point theorems.

880. Stochastic Differential Equations. 5 hours.

Prerequisite: MAT 807, 808, 809.

Modelling of dynamical systems, linear and nonlinear stochastic differential operator equations, stochastic distribution theory, computer solution of stochastic differential equations.

891. Seminar in Topology. 1-5 hours.

Prerequisite: MAT 812 or permission of department.

A study by the seminar methods of some phase of current research in topology.

892. Seminar in Algebra. 1-5 hours.

Prerequisite: MAT 845 or permission of department.

A study by the seminar method of some phase of current research in algebra.

893. Seminar in Analysis. 1-5 hours.

Prerequisite: MAT 802 or permission of department.

A study by the seminar method of some phase of current research in analysis.

894. Seminar in Numerical Analysis. 1-5 hours.

Prerequisite: MAT 835 or permission of department.

The study of special topics in numerical analysis by the seminar method.

895. Stochastic Systems Seminar. 1-5 hours.

Prerequisite: MAT 880, 881, 882.

Frontier methods, study of journal papers and recent books, dissertation research in stochastic differential equations, stochastic operator theory, etc. Visiting speakers and staff covering various topics of interest.

896. Applied Mathematics and Computer Seminar. 1-5 hours.

Prerequisite: MAT 806 or permission of department.

Recent work. Dissertation research. Large complex systems and other special topics. Applications in aerospace engineering, physics, ecology, meteorology.

910. Technical Report. 5 hours. (Max. 15 hrs.)

For use with the master's degree in Applied Mathematical Sciences — Mathematics option.

930. Thesis. 1-15 hours.

With the approval of his major professor, a condidate for the M.A. degree may take fifteen hours at the 800 level in lieu of writing a thesis.

MEDICAL MICRO- BIOLOGY (MMB)

J. B. Gratzek

(Veterinary Medicine Building, South Campus)

Graduate work is offered in medical microbiology leading to the MS and PhD degrees. Thesis specialization may be in any of the four areas: biology of pathogenic microorganisms, immunology-immunochemistry, animal virology, or infectious diseases of mammals, avian species, or fish. Two types of students are accepted for graduate training: those with bachelor's degrees and an interest in medical microbiology and those with a DVM degree or other medical degree who desire advanced training in this area.

Instruction in medical microbiology is coordinated with the course offerings in the microbiology department of the College of Arts and Sciences; and with the agronomy, food science and dairy science departments of the College of Agriculture. Suitable courses in these departments are included in students' programs as advisable. Instruction in infectious diseases is coordinated with work in the pathology and medicine and surgery departments of the College of Veterinary Medicine, the Poultry Disease Research Center, and the Southeast Poultry Research Laboratory.

Excellent facilities and equipment are available for research needs. Laboratory space is available for cell culture and virological studies, bacterial physiology, immunology and immunochemistry, diagnostic microbiology, gnotobiology, and fish disease research.

600. Principles of Epidemiology. 5 hours.

Prerequisite: Two courses in microbiology and permission of department.

Studies in principles of epidemiology, utilizing the holistic approach to population-disease relationships.

602. Diseases of Cultured Fishes. 5 hours.

Three lectures and two double lab periods.

Prerequisite: MMB 422/622 or equivalent.

A detailed study of diseases associated with the culture of warm water, cold water, and marine fishes. Specific disease entities are covered according to etiology, epidemiology, pathogenesis, diagnosis, prevention, and control. Laboratory sessions will cover laboratory methods utilized in the study of fish disease.

610. Immunology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MIB 350 and BCH/BIO 310, or permission of department.

Introduction to the mechanism of the immune response, host resistance to infection and serologic testing methods.

622. Pathogenic Bacteriology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MIB 350 and one additional course in microbiology.

Studies on the morphological, cultural and physiological properties of the important pathogenic bacterial and mycotic agents; their relation to health and disease is emphasized.

639. Diagnostic Microbiology. 5 hours. Two lectures and three double lab periods.

Prerequisite: MMB 410/610 or MIB 410/610 and MMB 422/622 or MIB 422/622 and permission of department.

A course presenting an application of basic microbiologic techniques to the problems associated with the recovery of disease organisms from clinical materials. Emphasis is placed on methodology and problems involved in laboratory isolation and identification.

650. Virology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MMB 350, BCH/BIO 310.

An introduction to the viruses: classification, replication, methodology, pathogenesis and epidemiology of viral diseases, and viral neoplasia.

680. Environmental Epidemiology. 5 hours.

Prerequisite: Two courses in microbiology.

Application of the basic principles and concepts of epidemiology to the environmental considerations of infectious diseases and chronic illnesses of current public health significance with special emphasis on occupational health.

816. Seminar in Medical Microbiology. 1 hour.

(Max. 3 hours per degree.)

Prerequisite: Available to majors in microbiology or allied sciences with two courses in microbiology.

Semi-formal meetings for discussion of research and new developments in the field. Attendance required of all microbiology graduate students.

820. (MIB) Advanced Pathogenic Microbiology. 5 hours.

Prerequisite: MMB 422/622 or MIB 422/622, BCH 801 and 802 or 401/601 and 402/602 or permission of department.

A detailed description of the pathogenic bacteria and their relationship to disease at the biochemical level.

821. Advanced Experimental Procedures in Pathogenic Bacteriology. 5 hours. Two lectures or discussion periods and three double lab periods.

Prerequisite: MMB/MIB 820 and BCH 402/602 or 802.

A course designed to acquaint the advanced student with experimental procedures used in studying pathogenic bacteria from the point of view of elucidating the various mechanisms by which bacteria cause disease. Areas to be covered include specificity of attachment, phagocytosis, assay and characterization of iron chelating and transporting compounds, properties of endotoxins.

830. Immunobiology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MMB 410/610 or MIB 410/610 and BCH 802 or permission of department.

Reactions of the host such as antibody production, delayed hypersensitivity, graft rejection and anaphylaxis will be emphasized. Recent findings in immunology will be considered in light of their theoretical implications to biology and medicine. In addition, the chemistry of antigens and their effect on the immune response will be considered.

850. Animal Virology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MMB 450/650 or MIB 450/650 and BCH 802.

A detailed study of the biological and physico-chemical characteristics of animal viruses stressing the cytological and biochemical alterations in infected cells. Reactions involving the entire host are minimized in this course except in cases where distinct host reactions are a phenomenon common to many viruses.

900. Problems in Microbiology. 1-10 hours. (Max. 10 hours per degree.)

Prerequisite: Adequate preparation in microbiology.

This course allows students to pursue intensive

study, under the direction of staff members, on approved problems in medical microbiology.

930. Thesis. 1-15 hours.

MICRO- BIOLOGY (MIB)

W. R. Finnerty
(Biological Sciences Building, South Campus)

Programs of study leading to both the MS and PhD degrees are offered in the various fields of interest in microbiology. Research problems in general and applied aspects of the science are available. Excellent facilities for research by faculty members and graduate students are available. These include: electron microscopy laboratories, a fermentation laboratory, the laboratories of the Marine Institute at Sapelo Island, and laboratories very well equipped for physiological, immunochemical, pathogenic, taxonomic, genetic, and cytological studies. The department is well equipped for conducting studies that require the use of radioactive isotopic tracers, gas-liquid chromatography, and fairly complex computing. For more complex computing the members of this department's research groups may use the resources of the University Computer Center.

Acceptable applicants for graduate study in microbiology may be enrolled at the beginning of any quarter. Prospective students should have credit for courses in either calculus or elementary statistics and in both quantitative analytical and elementary physical chemistry. Those applicants with otherwise acceptable qualifications may expect to enroll in any of these courses they lack after admission to our program. No foreign language is required for the master's or doctoral degrees.

600. History of Microbiology. 5 hours.

Prerequisite: Ten hours of microbiology.

Examination of the development of the science of microbiology with particular reference to contributions of scientists in microbiology and allied fields to intellectual thought and development. Significant literature of past and present is reviewed and discussed.

604. Microbiology of Anaerobes. 5 hours.

Prerequisite: MIB 409/609 or BCH 402/602 or permission of department.

The course will cover bacterial adaptations to

life without oxygen; the differences between facultative and strict anaerobes; distribution, taxonomy, and physiology of anaerobes; fermentations and pathways; anaerobic methodology; industrial applications of anaerobes.

607. (FS) Microbiology of Foods. 5 hours.

See FS 607.

609. Fundamentals of Microbiology. 5 hours.

Prerequisite: MIB 350.

Fundamental principles and techniques of general microbiology. Attention will be given to growth, nutrition, inheritance, ultrastructure and physiology of representative types of microorganisms.

610. Immunology. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: BCH/BIO 310, BIO 101 or their equivalents.

Immune defense mechanisms mediated by humoral or cellular mechanisms are discussed. The synthesis, structure and action of antibodies and lymphokines; the various forms of cytotoxic reactions and hypersensitivities, the regulatory mechanism involved, and their clinical importance in transplantation, tumor immunology, autoimmune and immune disorder diseases are studied.

613. Advances in Human Immunology. 5 hours.

Prerequisite: MIB 410/610.

The most recent data on the humoral and cellular immune response in humans will be discussed. The molecular, membranous and cellular events in the generation, regulation and production of antibodies and lymphokines, specific and nonspecific cytotoxic reactions and their importance in normal and pathological conditions will be studied.

614. Advanced Laboratory Methods in Microbiology. 5 hours. Five double lab periods.

Prerequisite: MIB 350; recommended: MIB 409/609.

Instruction in the design and execution of experiments will be provided to acquaint the student with experimental techniques necessary for basic studies on bacteria. Attention will be given to elective culture techniques, growth and enumeration of bacteria, bioassay techniques, effects of irradiation and of chemical mutagens, selection of mutants, isolation of DNA, and enzymatic assay techniques.

621. (FS) Environmental Microbiology. 5 hours.

See FS 621.

622. Pathogenic Bacteriology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MIB 409/609 or 414/614.

Studies on the morphological, cultural and physiological properties of the important pathogenic bacteria and their relation to health and disease.

650. Virology. 5 hours.

Prerequisite: BCH/BIO 310, MIB 409/609 or 414/614.

An introduction to the animal viruses, chlamydiae and rickettsiae. Emphasis on laboratory methodology, genetics and physiology of viral reproduction and viral-induced malignancy.

652. (DS) Microbiology for Sanitarians. 5 hours.

See DS 652.

659. (EHS) Microbiology of Water and Wastewater. 5 hours.

See EHS 659.

661. (AGY) Soil Microbiology. 5 hours.

See AGY 661.

662. Microbial Ecology. 5 hours. Three lectures or recitations and two 3-hour lab periods.

Prerequisite: MIB 350, or permission of department.

Emphasizes the roles of microorganisms in ecosystems. Attention is given to the examination of nutrient cycles, methods of microbial analysis and the functional roles of microorganisms.

670. Medical Mycology. 5 hours. Five lectures or recitations and five lab periods.

Prerequisite: MIB 350 or equivalent.

A survey of the yeasts, molds and actinomycetes most likely to be encountered by a medical mycologist in a diagnostic laboratory with special emphasis on the organisms which are pathogenic for man and other animals.

680. Microbial Genetics. 3 hours.

Prerequisite: BIO 320 or equivalent; MIB 350 or equivalent; BCH/BIO 310 or equivalent.

This course will cover the mechanisms of inheritance, recombination, and the regulation of gene expression in bacteria and bacteriophages. Limited consideration will be made of the genetics of free-living, lower eucaryotes (fungi), with primary emphasis on the genetics of procaryotes.

680L. Microbial Genetics Laboratory. 2 hours.

Prerequisite: BIO 320 or equivalent; MIB 350 or equivalent; BCH/BIO 310 or equivalent.

Corequisite: MIB 480/680.

Laboratory will emphasize mutant isolation and genetic mapping using conjugation, transduction and transformation. "Fusion" strains will be constructed to examine regulation of gene expression. A credit lecture is offered in

conjunction with this course. Graduate students may take the lab portion without the lecture if they have had previous microbial genetics course work.

681. Microbial Biogeochemistry. 5 hours.

Prerequisite: MIB 350, BCH/BIO 310 or equivalent; or permission of department. Recommended: MIB 462/662, 409/609.

An intensive examination of the microbial processes which are or have been important in modifying the earth's lithosphere, hydrosphere, and atmosphere. Emphasis is placed on microbially mediated precipitation and solubilization of minerals, cycling of dissolved and particulate organic matter in natural waters, and the physiological ecology of microorganisms adapted to environments of extreme pH, temperature, and pressure, etc.

701. Microbiology for Teachers. 5 hours. Three lectures and two double lab periods.

Prerequisite: 20 hours of biological science or 10 hours of biological science and 10 hours of chemistry.

Specifically for students who plan to teach in some area of microbiology. Emphasis will be placed on techniques and solutions to problems encountered in the teaching of the classification of microorganisms, their activities, industrial and agricultural applications, and public health aspects. The laboratory will stress innovative techniques for the high school and college microbiology teaching laboratory.

813. (GLY) Chemical and Physical Oceanography. 5 hours.

Prerequisite: CHM 122, PCS 128, MAT 254, CHM 123.

The chemical and physical interactions of sea water and its components are discussed.

816AB. Seminar in Microbiology. 1 hour each.

Prerequisite: Available to majors in microbiology or allied sciences with two courses in microbiology.

Semi-formal meetings for discussion of research and new developments in the field. Attendance required of all microbiology graduate students.

820. (MMB) Advanced Pathogenic Microbiology. 5 hours.

See MMB 820.

840. Advanced Electron Microscopy. 5 hours.

Daily double lab periods.

Prerequisite: BIO 501/701, or permission of department.

Directed laboratory experience in specialized methods used in electron microscopy.

850. Biological Membranes. 5 hours.

Prerequisite: BCH 802; physical chemistry recommended.

A survey of biological membranes including their lipid and protein components, structure, and function. A brief review of experimental techniques applicable to membrane systems will be followed by an in depth examination of selected membrane bound enzyme systems. Emphasis will be placed on current literature.

860. Physiology of Bacteria. 5 hours.

Prerequisite: MIB 409/609; BCH 801 and 802.

A survey of modern physiological and biochemical relationships and concepts in microorganisms. Emphasis on specialized aspects of intermediary metabolism, macromolecular syntheses, and microbial lipids.

861. Advanced Microbial Metabolism. 5 hours.

Prerequisite: MIB 860 or permission of department.

Examination of the development and current knowledge of microbial physiology. Significant literature of past and present is reviewed and discussed.

881. Advanced Microbial Genetics. 5 hours.

Prerequisite: MIB 480/680 or equivalent.

Studies of recent advances in the genetics of bacteria, fungi, viruses and other microorganisms with particular emphasis on contributions both to and from such areas as molecular and developmental biology, immunology, physiology, and ecology.

900. Problems in Bacteriology. 2-5 hours.

Prerequisite: Two graduate courses in microbiology.

This course allows students to pursue intensive study under the direction of staff members, on approved problems in various fields of microbiology. Maximum credit 50 hours with no more than 10 hours credit with grade toward any one degree.

930. Thesis. 1-15 hours.

MOLECULAR AND POPULATION GENETICS (MPG)

Wyatt W. Anderson

(Biological Sciences Building, South Campus)

The Department of Molecular and Population Genetics is the University's newest department, begun in January, 1980. It offers graduate programs leading to the MS and PhD degrees which replace those of the earlier Interdepartmental Program in Genetics. The department is particularly strong in the areas of recombinant DNA technology, regulation, genetic recombination, plant molecular biology, and population genetics. After a student is admitted, a faculty advisory committee is appointed to recommend a program of study based on the individual student's academic background and research interests. General degree requirements are specified on pages 32-37. A master's degree is not required for entrance into the doctoral program, and students without master's degrees are encouraged to enter the doctoral program directly. There is no foreign language requirement for the master's or doctoral degrees.

Faculty members associated with two interdepartmental programs in the Division of Biological Sciences—in ecology and in molecular and developmental biology—have close ties with the genetics department, especially in the areas of population genetics and developmental genetics. Graduate course offerings in these two interdepartmental programs are available to students in the genetics department and serve to complement the graduate course offerings in genetics.

Physical facilities available for research include all modern equipment and facilities, including a minicomputer and a variety of microcomputers, necessary for research in the various areas of genetics. Special on-campus facilities include a complete electron micros-

copy laboratory, controlled-environment equipment, equipment for radioisotope studies, a special fermentation facility, and extensive computer facilities. Cooperative arrangements for joint research exist with such off-campus facilities as the Russell Agricultural Research Center, the Yerkes Primate Center, the Sapelo Island Marine Institute, the Savannah River Ecology Laboratory, and the Oak Ridge National Laboratory.

Prospective students should address inquiries to the Graduate Coordinator, Department of Molecular and Population Genetics. Graduate students in the department are eligible for a number of University fellowships and research and teaching assistantships. All applicants for the doctoral program will also be considered for traineeships provided by a Public Health Service Institutional National Research Service Award. The deadline for application for most fellowships and assistantships is February 15, and students are normally only admitted at the beginning of the fall quarter.

611. (ZOO) Cytogenetics. 5 hours. Three lectures and two triple lab periods.

Prerequisite: BIO 320 or equivalent.

The behavior of chromosomes and their relationship to genetic concepts.

614. Population Genetics. 5 hours.

Prerequisite: MAT 254 and either BIO 320, 350, or permission of department.

The genetic structure of populations and the dynamics of genetic change within them.

615. Topics in Evolutionary Theory. 5 hours.

Prerequisite: BIO 320 or 350; or permission of department.

Theory and data pertaining to evolution of genetic systems, molecular evolution, coevolution, evolution of social behavior.

616. Ecological Genetics. 5 hours.

Prerequisite: BIO 320 and 350.

Genetic diversity and variation in relation to the environment; the interplay between ecological and genetical processes within populations.

620. Advanced Genetics. 5 hours.

Prerequisite: BIO 320.

This course will discuss a limited number of procaryotic, fungal, and mammalian genetic systems which form the basis of our understanding of molecular genetics. Techniques used in the analysis of the structure and function of viral and eucaryotic genomes will be emphasized.

860. Genetics Seminar. 1 hour. (Max. 5 hours.)

Prerequisite: Permission of department.

This course will examine the latest advances in genetics through oral presentations and invited speakers. The major emphasis will be in the areas of molecular genetics and molecular biology.

870. Seminar in Population Genetics. 1 hour. (Max. 5 hours.)

Prerequisite: Permission of department.

Weekly meetings will be held to discuss and evaluate the current research literature in population genetics.

882. Molecular Genetics. 5 hours. Two 2-hour lectures and one discussion session.

Prerequisite: BIO 320 and BCH 801 or equivalent.

An advanced course on the molecular mechanisms of gene action in bacteria and bacteriophages including discussions of chromosome structure and replication, mutagenesis and DNA repair, recombination mechanisms, transcription and translation controls, and molecular mechanisms of genetic regulation.

883. Advanced Topics in Genetics. 1-5 hours. (Max. 15 hours.)

Prerequisite: BCH 802 and MPG 882, or MPG 414/614; permission of department.

A reading and/or discussion course for advanced students with previous preparation in graduate level genetics. Topics will vary depending on instructor(s) but will involve in-depth analysis of such areas as genetic regulatory mechanisms, advanced aspects of ecological and population genetics, extrachromosomal genetics, molecular aspects of recombination mechanisms, ribosome synthesis and control, plasmid genetics, cytogenetics, and human genetics.

885. Molecular Genetics and Development in Eucaryotes. 5 hours. Two 2-hour lectures and one discussion session.

Prerequisite: MPG 882 or MPG/BOT 892 or permission of department.

An advanced course on the molecular and genetic basis of development in eucaryotes. Topics discussed include: organization of the eucaryotic genome and the molecular basis of gene regulation, genetics and development of organelles, cell and tissue interaction in development, hormonal mechanisms, and somatic cell genetics.

890A. Research Techniques in Genetics. 5 hours. (Max. 10 hours.)

Prerequisite or corequisite: One graduate

level course in genetics and permission of department.

A course designed to teach techniques employed in genetics research by student participation in the research projects of members of participating faculty. A student will spend five weeks in the laboratories of each of two faculty members. A maximum of two terms may be taken for credit.

892. (BOT) Nucleic Acids. 5 hours.

Prerequisite: BCH 802 or permission of department.

An advanced biochemistry course concerned with the physical chemistry, structure and function of nucleic acids. Specific topics include the isolation, structure, chemical analysis, hybridization, enzymology, and replication of DNA and RNA. Nucleic acid enzymes and protein-nucleic acid interactions in ribosomes, protein synthesis, viruses and chromosomes will also be examined.

900. Laboratory Research in Molecular and Population Genetics. 1-10 hours. (Max. 150 hours.)

Prerequisite: Permission of department.

This course permits students to pursue independent research projects under the direction of staff members. Maximum credit of 150 hours with no more than 10 hours credit toward a program of study for a given degree.

930. Thesis. 1-15 hours.

MUSIC (MUS)

Ralph E. Verrastro

(Fine Arts Building, North Campus)

The Master of Music degree is offered in composition, music literature or performance.

Students concentrating in musicology should enroll for the Master of Arts degree.

Students desiring fifth year certification as teachers of music in the public schools should enroll for the Master of Music Education degree offered in cooperation with the College of Education. The MMed degree also offers a concentration in music therapy for students wishing to qualify as registered music therapists. Details of the program may be found on page 44.

Students desiring sixth year certification as teachers of music in the public schools should enroll for the Specialist in Music Education Program (Sixth Year Program) offered in cooperation with the College of Education. Details of the program may be found on page 45.

The Doctor of Education degree with subject matter concentration in music education is offered in cooperation with the College of Education. Details of the program may be found on page 46.

600. Special Problems in Music. 1-10 hours. (Max. 10 hours.)

Selected students are permitted to secure specialized training appropriate to the needs of the individual. Projects may involve the study and analysis of music and problems related to music, as approved by the department.

601. Introduction to Graduate Study in Music Education. 3 hours.

Prerequisite: Students must hold the bachelor's degree in music education.

This course examines social foundations of American music education, music education bibliography, the role of research in music education, and current practices and issues in music education.

620. Ancient and Medieval Music. 5 hours.

A survey of music from the birth of Christianity to ca. 1400, with an introduction to the place of music in Greek and Roman societies. (Offered alternate years.)

621. Music in the Renaissance Period. 5 hours.

A music history and literature course covering

the Renaissance period, 1400-1600. (Offered in alternate years.)

622. Music in the Baroque Period. 5 hours.

A study of musical styles and forms from Monteverdi through Bach and Handel. (Offered alternate years.)

623. Music in the Classic Period. 5 hours.

A study of chamber, orchestral, keyboard, and operatic works from the middle and late 18th Century. (Offered alternate years.)

624. Music in the Romantic Period. 5 hours.

An intensive study of the Romantic period; emphasis on the development of the song, symphony, chamber music, and opera. (Offered alternate years.)

630. Keyboard Literature. 3 hours.

A survey of music composed for harpsichord and piano from the Renaissance period to the present day.

631. Song Literature. 3 hours.

An introduction to the major styles of song composition from the time of the troubadours to the present.

632. String Literature. 3 hours.

The study of string music from the Italian baroque to the present day.

636. Opera Literature. 3 hours.

The study of representative operas from the Baroque era to the 20th Century.

637. Organ Literature. 3 hours.

Prerequisite: MUS 181B or equivalent.

A survey of the development of organ music in relation to the development of the instrument itself.

640. Non-Western Music. 5 hours.

An introduction to the music of non-European cultures, including those of the Far East, Near East, and Africa.

641. Bibliography. 5 hours.

An introduction to the existing body of materials, including music and books on music, which serves as the basis for musical research, and to the procedures and techniques used in research.

655. Advanced Music History. 5 hours.

Special studies in history and literature of music.

658. Wind Instrument Literature. 3 hours.

A survey of the solo, sonata, and ensemble music composed for wind instruments, from the Baroque period to the present.

662. Modern Music. 5 hours.

A literature course illustrating modern trends

in music from Schoenberg, Stravinsky, Hindemith, Bartok, and others.

670. Form and Analysis. 5 hours.

Prerequisite: Music 310.

Harmonic and polyphonic forms analyzed. Special stress given sonata form. Students encouraged to write originally in forms thus analyzed.

671. 16th Century Counterpoint. 5 hours.

Prerequisite: MUS 310.

The contrapuntal style and techniques of the 16th Century; acquaintance with species counterpoint.

675. 18th Century Counterpoint. 5 hours.

Prerequisite: MUS 310.

Late Baroque contrapuntal techniques and styles.

679. Introduction to Electronic Music. 3 hours.

Prerequisite: MUS 309.

An introductory course in electronic music systems, composition, and literature.

680. Acoustics of Music. 3 hours.

Prerequisite: Permission of school.

A study of the physical nature of sound production and transmission with particular application to music instruments, the voice, and architecture.

691. Chamber Music Ensemble. 1-6 hours. (1 hour per quarter; Max. 6 hours; one hour per week.)

Open to students who can qualify in keyboard, string, wind instruments, or percussion.

691K. Contemporary Chamber Ensemble. 1 hour. (Max. 6 hrs.)

Concentration on 20th Century literature for small ensembles, including aleatoric and electronic literature. Open to students who can qualify.

703. Research Methods in Music. 5 hours.

A study of basic concepts, types and techniques of research as they apply to music. Students plan and conduct individual research projects.

706. Jazz Arranging. 3 hours.

Prerequisite: MUS 324 and permission of department.

Development of the ability to write for jazz combos and jazz bands.

710. Advanced Theory. 3 hours.

Prerequisite: MUS 310.

A survey of harmonic and contrapuntal resources, with emphasis upon aural and visual analysis.

711. Pedagogy of Music Theory. 3 hours.

Prerequisite: MUS 710 and 470/670.

A survey of current philosophies, techniques and materials used in the instruction of music theory.

712. Advanced Techniques for Teaching Music in the Elementary School. 3 hours.

Prerequisite: MUS 312.

Course includes: 1) formulation of behavioral objectives for elementary school music; 2) new materials and methods for teaching elementary music; 3) the conceptual structure of music as it relates to the activities of the elementary music class; 4) problems of supervision; and 5) evaluation of student progress.

714. Workshop for Teachers in Music Education. 5 hours.

Advanced study of techniques, methods and materials for the elementary school music program.

715. Early Childhood Musical Development. 5 hours.

Prerequisite: For majors in music education, early childhood education, elementary education or child development. Formal music training is not required, but general knowledge of the fundamentals of music (pitch, rhythm, timbre, expression) is expected.

A study of the musical development of children from birth through age eight years. This course examines research dealing with auditory perception, auditory discrimination, responses of children to music, modes of learning music, and children's acquisition of musical performance skills and understandings.

724. Musical Production for the Public Schools. 5 hours.

Prerequisite: Senior level or for music majors. Techniques and methods for directing and producing musical comedy, operetta, and light opera in the public schools. Includes a survey of available materials for elementary, middle, and high school levels.

725. Vocal Techniques for Non-Majors 2 hours. (Max 6 hours.)

Prerequisite: Audition for instructor.

Vocal techniques, diction and ensemble preparation for singers with little or no previous vocal training.

726. Marching Band Techniques and Methods. 3 hours.

Methods and techniques for organizing and training marching bands. Planning music, drills, formations and shows.

727. Computer-Assisted Instruction in Music. 3 hours.

Prerequisite: MUS 212 or equivalent.

Provides general background in computer-assisted instruction as a continuation of pedagogical techniques in music. Also provides practical experience in designing, programming, and testing CAI music lessons on the University of Georgia's CYBER 6400 computer or on microcomputers such as the PET 2001-8 or Apple II.

730. General Music in the Secondary School. 3 hours.

Prerequisite: MUS 313.

Study of structure and content of general music in the secondary school with emphasis on teaching materials and techniques.

731. Problems in Vocal Music Education. 3 hours.

Prerequisite: MUS 312 and 313.

Study of voice problems from classroom point of view beginning in elementary and continuing through secondary school; techniques used in choral ensembles, evaluation of present concepts and practices.

732. Problems in Instrumental Music Education. 3 hours.

Prerequisite: MUS 312 and 313.

Study of methods and techniques used for development of the instrumental music program beginning in elementary and continuing through secondary school; diagnosis of problems relating to strings, woodwinds, brasses, and percussion.

733. Music Administration and Supervision. 5 hours.

Prerequisite: Undergraduate requirements in education, MUS 312 and 313.

Administrative functions, procedures, and philosophies as they affect music instruction in schools and colleges.

734. Choral Music Material. 3 hours.

Prerequisite: MUS 312 and 313.

Study and evaluation of music literature available for use in public school at all levels of instruction; research in various media and schools of composition which can be adapted for school use.

735. Instrumental Music Material. 3 hours.

Prerequisite: MUS 312 and 313.

Evaluation of materials available at all levels of instruction for band, orchestra and chamber music; research in materials of various media and schools of composition which can be adapted for school use.

737. Score Analysis. 3 hours.

Prerequisite: MUS 470/670.

Techniques of harmonic and formal analysis and preparation of scores for rehearsal.

738. Advanced Conducting. 3 hours.

Prerequisite: MUS 362, 363, or 364.

An intensive study of choral and instrumental conducting methods and techniques with application in laboratory sessions.

740. Principles of Music Therapy I. 3 hours.

A study of music as human behavior, and its use with the handicapped and those suffering behavioral disorders.

741. Principles of Music Therapy II. 3 hours.

Prerequisite: MUS 540/740.

A study of the functions of the music therapist with emphasis on the use of music in a therapeutic environment.

744. The Influence of Music on Behavior. 5 hours.

Prerequisite: BIO 101, 102; PSY 423; ZOO 212.

A study of the various physiological effects of music. The place of functional music in music education. Investigation of effective media and musical patterns. The relation of music to health. Music in industry.

745. Clinical Experience. 3 hours.

Prerequisite: Completion of junior year in Bachelor of Music with major in music therapy. Three months' work as a general aide in an approved psychiatric hospital for practical clinical experience.

746. Music in Recreation. 3 hours.

Experiences in elementary and secondary methods of teaching music from the perspective of social and recreational instruments.

747. Music for Exceptional Children. 5 hours.

Prerequisite: MUS 201, or 303, or EXC 500/700.

This course is designed to prepare teachers of exceptional children to teach music in special classrooms or in settings where exceptional children are integrated into the regular music classes.

751. Instrumental Techniques. 2-6 hours. (2 hours per quarter; Max. 6 hours.)

An advanced study of the performance and teaching techniques of wind, string, and percussion instruments.

762. Jazz Piano Improvisation Class. 3 hours.

Prerequisite: MUS 246F.

Application of skills and techniques in keyboard jazz playing based upon a knowledge of modern-popular harmonic and notational practices.

780. (DRA/ART) Arts Development in the Contemporary Community. 5 hours.

See DRA 780.

781. Applied Music. 1 hour. (Max. 6 hours.)

One 25-minute lesson a week.

Applied music in secondary performance media for graduate students in music education.

782. Applied Music. 2 hours. (Max. 6 hours.)

Applied music for music education graduate students in their field of performance concentration.

783. Applied Music. 3 hours.

Applied music for graduate students in their field of performance concentration.

785. Applied Music. 5 hours.

Primarily for the major performance medium of music students in the MM program. Others by permission of department.

787. University Symphony Orchestra. 1 hour. (Max. 12 hours.)

Prerequisite: Permission of department after audition.

Intensive study and performance of symphonic compositions with concentration on advanced scores of suites, overtures, concerti, and symphonies.

790. Symphonic Wind Ensemble. 1 hour.

Prerequisite: Admission by audition.

Mixed woodwind-brass-percussion ensemble for the study and performance of wind chamber compositions with concentration on advanced scores, including a substantial emphasis on contemporary music. Professional level experience. Four hours per week.

791. Collegium Musicum. 1 hour.

A study of the inter-relationship of music history, theory, and performance.

792. Chamber Music Ensemble. 2 hours.

One hour a week. Preparation of representative works with faculty members and qualified students.

793. Chamber Music Ensemble. 3 hours.

One hour a week. Preparation of representative works with faculty members and qualified students; to include public recital.

794. University Chamber Orchestra. 1 hour. (Max. 18 hours.)

Prerequisite: A minimum of 60 hours of undergraduate fine arts/humanities courses and permission of department.

Orchestral ensemble for the study and performance of chamber compositions with concentration on advanced scores. Professional level experience. Three hours per week.

800. Practicum in Music. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of school.

Supervised professional work experience with an educational institution, musical organization, or arts agency.

811. Analysis: Post-Romantic Music. 5 hours.

Prerequisite: MUS 470/670 and 510/710.

The study of chromatic harmony, modal harmony, and the stylistic characteristics of selected masterworks written during the late 19th and 20th Centuries. Includes the composition of short musical exercises in representative styles.

812. Analysis: Contemporary Music. 5 hours.

Prerequisite: MUS 470/670 and 510/710.

An examination of music and theoretical concepts since 1920. Emphasis will be placed upon scalar, atonal-serial, and free atonal methodology in selected works.

820. Music in Higher Education. 4 hours.

Development of understanding relating to the history and development of music in higher education in the United States and the mission, function, and operation of music units within a college or university setting.

821. Music Education Seminar. 5 hours.

Prerequisite: Music 533/733.

A study of basic principles and current thought in music education.

824. Measurement and Evaluation in Music. 5 hours.

Prerequisite: Graduate standing in music.

Study of measurement techniques and instruments suitable for evaluating music students and programs. The course will include procedures for systematic collection of information, interpretation and ways of effecting change in the teaching and learning of music.

851. Pedagogy of Music. 5 hours.

Prerequisite: Graduate standing in music.

The course will focus on principles and practices of music instruction: learning theory, curriculum design, and systems of evaluation.

860. Seminar in Music Theory. 5 hours.

Prerequisite: MUS 470/670 and 510/710.

A study of theoretical concepts from all periods of Western music.

867. Special Studies of Composers. 5 hours.

An intensive study of the works of selected composers.

868. Chamber Music Literature. 5 hours.

The study of the important chamber music works from the Italian trio sonata to Bartok.

Emphasis on study and analysis of major works.

869. Performance Practices. 5 hours.

Prerequisite: Permission of school.

A survey of the changing approaches found in the performance of music in different periods.

871. American Music. 5 hours.

The development of music in North America from 1620 to the present.

873. The Concerto. 5 hours.

A survey of the concerto grosso and solo concerto literature from the 17th Century to the present day.

874. Psychology of Music. 5 hours.

A survey of experimental findings and research methods in the psychology of music.

881. Applied Music. 1 hour. (Max. 10 hours.)

Prerequisite: Permission of school after audition.

Applied music in secondary performance media for graduate students pursuing doctoral degrees in music.

882. Applied Music. 2 hours. (Max. 20 hours.)

Prerequisite: Permission of school.

Applied music study in primary performance media for graduate students pursuing doctoral degrees in music.

883. Applied Music. 3 hours. (Max. 30 hours.)

Prerequisite: Permission of school.

Applied music study in primary performance media for graduate students pursuing doctoral degrees in music.

885. Applied Music. 5 hours.

Fifty minutes of private instruction and a one-hour seminar each week. Primarily for the major performance medium of post-master's music students.

886. Lecture-Recital. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of school.

A public recital (1 hour duration) involving an artistic performance and a scholarly discussion of selected music literature.

900. Research in Music. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of school.

Independent research conducted under faculty supervision. Intended primarily for master's and doctoral students who are in the early stages of thesis or dissertation research. Maximum credit of 75 hours with no more than 10 hours credit toward a program of study.

921. Music Problems. 5 hours.

Prerequisite: Permission of school.

Functional study of a topic or problem signifi-

cantly related to the student's professional goal.

930. Thesis. 1-15 hours.

NOTE: Some music education courses are listed as EMU courses in the College of Education section of this bulletin.

PARASITOLOGY (PAR)

William L. Hanson
(*Veterinary Medicine Building, South
Campus*)

Graduate work leading to the MS and PhD degrees in parasitology is offered by the department. A wide choice of potential student dissertation areas are available and include studies of the host specificity, morphogenesis, chemotherapy, and immunology of parasitic protozoa and helminths as well as various aspects of wildlife diseases.

Applicants for graduate study are accepted to begin preferably in the fall quarter. Prospective students who wish to work toward an advanced degree in parasitology are required to have either a professional degree in a medical science or a bachelor's degree in biological science.

Prospective students desiring financial assistance should contact the department head well in advance of the time of entry into the Graduate School.

The language requirement for the doctoral degree is one foreign language.

608. Veterinary Parasitology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Permission of department.

Parasitic nematodes, cestodes, and trematodes are studied on the basis of taxonomy, morphology, life cycle, pathological manifestations, diagnosis, treatment, prevention and control.

609. Veterinary Parasitology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Permission of department.

Parasitic protozoa and arthropods are studied on the basis of taxonomy, morphology, life cycle, pathological manifestations, diagnosis, treatment, prevention and control.

803. Helminthology. 5 hours. One lecture and four 2-hour lab periods.

Prerequisite: Permission of department.

Study of the morphology, life histories, classification, and parasitic relationship of the helminths.

805. Problems in Parasitology. 1-5 hours.

Prerequisite: Permission of department.

Detailed studies will be made of parasitic diseases of both birds and mammals. The nature of the studies will be determined somewhat by the student's major field of interest.

806. Techniques in Experimental Parasitology. 5 hours. Five 2-hour lab periods.

Prerequisite: PAR 408/608 and 409/609 or equivalent.

Techniques necessary for *in vivo* and/or *in vitro* cultivation and maintenance of the life cycle of selected helminth, arthropod, and protozoan parasites will be employed.

824. (ZOO) Immunity to Animal Parasites. 5 hours.

Prerequisite: PAR 408/608 and 409/609 or equivalent and MMB 410/610 or equivalent or permission of department.

A study of the general principles and mechanisms of immunity to parasitic protozoa, helminths, and arthropods. *In vivo* as well as *in vitro* techniques will be utilized to demonstrate these principles and mechanisms.

830. (ZOO/PS) Seminar in Parasitology. 1 hour. See ZOO 830.

850. (FRS) Diseases of Wildlife. 5 hours.

Prerequisite: Permission of department.

The course is designed to give fundamental instruction in wildlife diseases. Emphasis will be placed on gross anatomy, necropsy procedures, gross and microscopic alterations of diseased tissues produced by bacterial, mycotic and viral agents.

851. (FRS) Diseases of Wildlife. 5 hours.

Prerequisite: PAR 850.

Major emphasis will be placed on fundamental concepts of toxicologic, nutritional and parasitologic diseases as they relate to public health, diseases of livestock and game management.

900. Research in Parasitology. 1-15 hours. (Max. 100 hrs.)

Prerequisite: Permission of department.

This course allows students to pursue intensive study under the direction of faculty members on approved research projects in various fields of parasitology. Maximum credit of 100 hours with no more than 10 hours credit with grade toward satisfying the requirements for any one degree.

930. Thesis. 1-15 hours.

PATHOLOGY (VPP)

J.R. Duncan

(Veterinary Medicine Building, South Campus)

Graduate study leading to the MS or PhD degrees in veterinary pathology with emphasis in either anatomic or clinical pathology are offered by the department. A wide choice of dissertation areas are available involving the pathogenesis of diseases of the various body systems. There is the potential for studies in gross pathology, histopathology, fine structural pathology, biochemical pathology, and immunopathology.

Applicants for graduate study are accepted to begin at the beginning of any quarter. Prospective students are required to have a professional degree in a medical science.

No foreign language is required for the doctoral degree.

625. General Animal Pathology. 5 hours.

Prerequisite: Permission of department.

An introduction to pathology which considers the dynamic responses of the animal body to disease.

701. Necropsy Practicum. 1-5 hours. (Max. 10 hrs.)

Prerequisite: VPP 427 or equivalent.

Provides instruction in the necropsy diagnosis of diseases of animals. Studies are made of the gross and microscopic alterations of tissues resulting from disease.

702. Biopsy Practicum. 1-5 hours. (Max. 10 hrs.)

Prerequisite: VPP 427 or equivalent.

Provides instruction in the diagnosis of diseases of animals by biopsy techniques. Studies are made of the microscopic alterations of tissue submitted for antemortem diagnosis.

703. Cytology Practicum. 1-5 hours. (Max. 10 hrs.)

Prerequisite: VPP 427.

Provides instruction in the diagnosis of diseases of animals by cytologic techniques. Studies are made of cytologic preparations prepared from fluids and tissues submitted for antemortem diagnosis.

800. Pathology Rounds. 1-2 hours. (Max. 6 hrs.)
Prerequisite: VPP 427 or equivalent.
The presentation of complete case studies in weekly clinical pathology and histopathology rounds.

802. Cellular Pathology 5 hours.
Prerequisite: VPP 427 or equivalent.
A detailed study of the response of the body to disease. Emphasis is placed on fine structural and molecular changes and includes mechanisms of cellular injury, carcinogenesis and mechanisms of neoplasia and the inflammatory process.

805. Problems in Veterinary Pathology. 2-5 hours.
Prerequisite: VPP 427 or equivalent.
Detailed studies will be made of disease problems of both birds and mammals. The nature of the studies will be determined somewhat by the student's major field of interest.

807. Veterinary Hematology. 5 hours.
A basic study dealing with the morphology, physiology and pathology of the blood and blood forming tissues. The laboratory will emphasize the morphology of normal and abnormal blood and bone marrow of domestic animals.

810. Microscopic Pathology. 5 hours.
Prerequisite: VPP 427 or equivalent.
Studies of the basic alterations produced as a result of disease in the various body systems of domestic animals.

812. Clinical Laboratory Medicine. 2-5 hours. (Max. 15 hours.)
Prerequisite: VPP 461 and 462L.
A study of the diagnosis of disease by laboratory methods. Emphasis will be placed on the derivation and interpretation of laboratory data, and the microscopic examination of blood, bone marrow, urine, and cytologic preparations from various tissues.

813. Diagnostic Oncology. 5 hours.
Prerequisite: VPP 810 or permission of department.
Study of the microscopic features of neoplasms of domestic animals. Emphasis is placed on the identification and characterization of the various tumors.

814. Seminar in Veterinary Pathology. 1-3 hours. (Max. 3 hours.)
Prerequisite: Graduate standing in veterinary medicine or a closely allied field.
Graduate students and staff members will regularly participate in the review and discussion of basic problems and diseases currently or

potentially important in the field of veterinary medicine.

822. (AM) Microscopic Pathology of Poultry. 5 hours.
Prerequisite: VPP 425/625, 426, 427 or equivalent, or permission of department.
Detailed microscope studies will be made of avian tissues and the effects of specific diseases and their processes on them. A working knowledge of tissue processing and differential staining will be included.

832. Pathology of Laboratory Animals. 2-5 hours.
Prerequisite: VPP 427 or equivalent.
Detailed studies of the etiology, tissue alterations, both macroscopic and microscopic, of diseases of the common laboratory animals.

835. Experimental Pathology. 3-5 hours.
Prerequisite: VPP 425/625, 426, 427 or equivalent.
Detailed macroscopic and microscopic study of the pathological alterations resulting from experimentally reproduced changes. Stress will be placed on isolation of viral, bacterial, or other agents and reproduction of the disease.

930. Thesis. 1-15 hours.

PHARMACY (PHR)

C. DeWitt Blanton
(Pharmacy Building, South Campus)

Doctoral language requirement: one foreign language.

Graduate work leading to the MS and PhD degrees may be pursued in the areas of the pharmaceutical sciences.

Graduate studies in pharmaceuticals explore and define the physical and chemical properties of pharmaceutical systems, and the mechanisms by which medication from these systems may be made available for utilization by the body. Areas of specialization include pharmaceuticals, pharmacokinetics, biopharmaceutics, and industrial pharmacy. The multidisciplinary approach is used to solve research problems in pharmacokinetics, stability kinetics, dissolution phenomena, drug analysis, product development and dosage form design.

Pharmacology is the study of the action of chemicals on living organisms, the effects induced and their therapeutic applications. As a scientific discipline, it is based on the physical and biological sciences with particular emphasis on physiology and chemistry. Specific programs are available in neuro-pharmacology, behavioral pharmacology, biochemical pharmacology, and cardiovascular pharmacology.

Toxicology is the scientific discipline which deals with the injurious effects of chemicals on humans and other living organisms. Toxicology is a broad, multidisciplinary field requiring expertise in a number of biological sciences, including biochemistry, physiology, pharmacology, cell biology, pathology and biostatistics. Toxicology is rapidly expanding in scope and prominence, due to the increasing use/misuse of chemicals and to the increased recognition of hazards posed by chemicals. Students may choose to work in ongoing research programs involving studies of: drug/chemical interactions; relative pharmacokinetics and toxicity of inhaled and ingested hydrocarbons; mechanisms of cytotoxic actions of halogenated organics; biochemical role of calcium in cellular injury

by chemicals; influence of nutrition of chemical metabolism and toxicity; role of diet in chemically-induced cancers; influence of lead exposure and drugs on harmful effects of noise.

Medicinal chemistry is unique among the specialized areas of chemistry, in that it requires a significant background in the biological sciences as well as a thorough understanding of chemistry. Areas of specialization are the synthesis of new compounds of medicinal interest, *in vitro* and *in vivo* studies of drug metabolism, and analytical studies of drugs in dosage forms and biological samples such as plasma or urine.

Pharmacognosy is concerned with the commerce, identification, and purification of naturally occurring substances used as drug products, and with the isolation, purification, and identification of the constituents of natural medicinal agents. Students majoring in this area are heavily trained in botany, chemistry, and biochemistry.

Graduate studies are offered in pharmacy care administration with four options open to the student. Option A, social sciences of pharmacy, is an interdisciplinary program. Option B, behavioral and management studies, an interdisciplinary program with a human relations orientation. Option C, hospital pharmacy administration.

For any graduate course in the area of pharmacy the prerequisites are two senior division courses in pharmacy or related subjects. Graduate students in pharmaceutical sciences need not have a pharmacy degree but will be required to have an equivalent background in the physical or biological sciences.

Unless otherwise specified, all laboratory periods are three hours.

606. Pharmaceutics I. 5 hours.

Prerequisite: Permission of department.

The general consideration of the underlying principles of dosage form design, compounding, and technology. Laboratory work involves the preparation and evaluation of the various dosage forms and the dispensing of compounded prescriptions. Prescription handling and dispensing experience at the University Health Service is a part of this sequence.

607. Pharmaceutics II. 5 hours.

Prerequisite: PHR 406/606.

The general consideration of the underlying principles of dosage form design, compounding, and technology. Laboratory work involves the preparation and evaluation of the various dosage forms and the dispensing of compounded prescriptions. Prescription handling

and dispensing experience at the University Health Service is a part of this sequence.

633, 634, 635. Principles of Drug Action. 5 hours each.

Prerequisite for 633: PHR 325, 374, 350 or permission of school.

Prerequisite for 634: PHR 404, 447 or permission of school.

Corequisite for 635: PHR 445/645 or permission of school.

A study of the action of drugs in current use, emphasizing the chemical and pharmacological principles related to stability, bio-availability, structure-activity relationship, pharmacologic action, therapeutic application and toxicology. The drug categories included in PHR 433/633 are antihistamines and related drugs, diuretics, endocrine hormones and related drugs. Categories included in PHR 434/634 are autonomic, anticoagulant, and cardiovascular drugs. PHR 435/635 is devoted to central nervous system active drugs. The courses are jointly taught by the pharmacology and medicinal chemistry faculties.

645. Pharmacology Laboratory. 1 hour. One 3-hour lab each week.

Corequisite: PHR 435/635.

Experiments designed to demonstrate the action of CNS, autonomic and cardiovascular drugs on laboratory animals.

649. Human Physiology I. 5 hours.

Prerequisite: BIO 102, CHM 241 or permission of school.

Functions of the human nervous, neuromuscular and digestive systems in health and in major disease states.

650. Human Physiology II. 5 hours. Four lectures and one discussion period.

Prerequisite: BIO 102, CHM 241 or permission of school.

Function of the human cardiovascular, respiratory, renal, endocrine, and reproductive systems in health and in major disease states.

721. Special Topics in Pharmacy. 3-5 hours. (Max. 20 hours.)

A study of specialized pharmaceutical systems, processes, and techniques, including assignment of current literature and student presentations.

722. Industrial Pharmacy I. 3-5 hours. One lecture and 6 to 9 lab hours weekly.

Prerequisite: PHR 407 or permission of school. Lectures and lab are concerned with the formulation and production of powders, capsules, compressed tablets and coated tablets.

Production equipment and quality control procedures and problems are also studied.

723. Industrial Pharmacy II. 5 hours. Variable lecture and laboratory hours weekly.

Prerequisite: PHR 407 or permission of school. To acquaint students with specialized pharmaceutical systems, processes and control procedures involved with liquid, semi-solid, and aerosol dosage forms.

725. Clinical Pharmacokinetics. 3 hours.

Prerequisite: Permission of school.

Clinical pharmacokinetics deals with the concepts and techniques of the kinetics of absorption, distribution and elimination of drugs as applied to patient care.

726. Sterile Products and Techniques. 5 hours. Two-hour lectures and nine hours lab.

Prerequisite: Permission of school.

The course deals with the manufacture of injectible pharmaceutical products and includes formulation; environmental and product testing; sterilization and packaging techniques.

730. Manufacture of Cosmetics. 3 hours.

Prerequisite: PHR 406/606.

A study of cosmetic formulations and methods of manufacture. Examples of several types of cosmetic products will be prepared in the laboratory.

775. Chemotherapy. 5 hours.

Prerequisite: MIB 402; PHR 435/635.

A course dealing with the drugs used to treat and cure infectious diseases, encompassing a discussion of the chemistry, mechanism of action, pharmacology and therapeutic applications of antiseptic, antibacterial, antifungal, antiprotozoan, anthelmintic, antiviral and oncologic agents. Also included are immunizing biologicals and a review of the classifications of infectious disease organisms.

777. Institutional Pharmacy Administration Residency. 15 hours.

Prerequisite: PHR 524/724 and baccalaureate pharmacy degree or Doctor of Pharmacy degree.

The application of administrative principles in the institutional environment. The residency involves observation and participation in a wide variety of institutional administrative functions. These include policy development and implementation, financial management activities, interdepartmental administrative activities and the solution of representative administrative problems.

785. Disease States and Therapeutics. 5 hours.
Prerequisite: PHR 435/635.

A discussion of disease states with emphasis on procedures involved in restoring the patient to normal health.

793. Pharmaceutical and Health Care Service. 3 hours.

Prerequisite: Completion of all required PHR 400 level courses or permission of school.

A study of the principles and methods involved in the rendering of pharmaceutical and health care services. Included are the social, economic, legal and professional aspects and the study of the activities of providers and consumers of such services.

801. Medicinal Chemistry. 3 hours.

Prerequisite: Permission of school.

A detailed study of the theoretical aspects of medicinal chemistry designed specifically for the student of medicinal chemistry lacking a pharmacy background.

803. Pharmacy Seminar. 1 hour. (Max. 5 hours.)

Semi-formal meetings for discussion of research and new developments in the field.

804. Pharmaceutical Control and Analysis I. 5 hours.

Prerequisite: Permission of school.

Lectures and laboratory instruction are devoted to the identification and analysis of drugs by proton magnetic resonance, infra-red and ultra-violet spectroscopic analysis.

805. Pharmaceutical Control and Analysis II. 5 hours.

Prerequisite: Permission of school.

Lectures and laboratory instruction are devoted to the separation, identification and analysis of drugs by thin-layer, gas and high-performance liquid chromatographic methods.

806. Pharmaceutical Control and Analysis III. 5 hours.

Prerequisite: Permission of school.

Lectures and laboratory instruction are devoted to the identification and analysis of drugs by mass spectrometry, fluorescence, phosphorescence and atomic absorption analysis.

807. Pharmaceutical Control and Analysis IV. 5 hours.

Prerequisite: Permission of school.

Lectures and laboratory instruction are devoted to the separation, identification and analysis of drugs and drug metabolites in biological samples.

809AB. Advanced Medicinal Chemistry. 4 hours each.

Prerequisite: PHR 435/635 or permission of school.

A detailed study of the correlation of chemical structure with biological activity will be presented with special emphasis on the relation of physicochemical properties to biological response.

811. Heterocyclic Medicinal Chemistry. 3 hours.

Prerequisite: CHM 444/644 or permission of school.

A course designed for the study of the chemical nature and behavior of the main nitrogen, oxygen and sulfur containing heterocyclic compounds of medicinal significance.

812. Mechanisms of Biological Degradations. 3 hours.

Prerequisite: BCH 801, CHM 431/631 or permission of school.

Lectures discussing the chemical mechanisms of biochemical transformations of small molecules. Attention will be focused on research reports on mammalian systems.

816. Organic Chemistry of Synthetic Medicinal Agents. 3 hours.

Prerequisite: CHM 430/630 and permission of school.

Preparation and physiochemical properties of organic medicinal agents of synthetic origin.

823, 824. Advanced Physical Pharmacy. 5 hours each.

Discussion of advanced physical chemical methods as they apply to pharmaceutical problems and phenomena.

826. Pharmacokinetics. 5 hours.

A study of the principles of kinetics of drug absorption, distribution and elimination, with emphasis on the design and evaluation of mathematical models.

829. Drug Complexation. 5 hours.

Prerequisite: PHR 435/635 or permission of school.

Principles of thermodynamics, equilibria and kinetics in mechanisms of drug-biomacromolecule interactions. Methods, including direct measurements, subtractive methods and electrostatic methods, for the study of drugs or other small molecules and their interactions with macromolecules are examined.

830. (FS) Radiation Principles in Pharmacy. 5 hours.

See FS 830.

842. Cardiovascular Pharmacology. 5 hours.
Prerequisite: PHR 434/634 or permission of school.

A study of physiological control mechanisms of the mammalian cardiovascular system and how defects may lead to clinically identifiable disease states. Experimental approaches are evaluated and the actions of pharmacologically active agents are discussed.

843. Advanced Pharmacology. 4 hours.
Prerequisite: PHR 435/635 or permission of school.

A study of the behavioral and neurochemical aspects of drug action in the central nervous system.

844. Methods in Pharmacological Research. 5 hours. Three hours lecture and six hours lab.
Prerequisite: PHR 433/633, STA 421/621 or permission of school.

A review of classical and biochemical methods used in evaluating compounds for their pharmacologic activity.

846. (VPH) Molecular Pharmacology. 5 hours.
Prerequisite: Permission of school.

A detailed study of (a) the interaction of drugs with tissue receptors, and (b) the absorption, distribution, metabolism and elimination of drugs by the organism. (Spring quarter of even numbered years.)

850. Problems in Pharmaceutical Marketing. 5 hours.

Prerequisite: Permission of school.
An in-depth examination of drug marketing experiences. Special emphasis is placed on the problems which arise in seeking a satisfactory relationship between the manufacturer, wholesaler, retailer, and the institutional sectors. A competitive pharmacy computer model is an integral portion of the course.

851. Health Care Problems. 5 hours.
Prerequisite: Permission of school.

A comprehensive examination of the state of the nation's health, the distribution of health care facilities, and the various programs, both public and private, designed to improve the quality and distribution of health care throughout the United States.

853. Research in Pharmacy Care Administration. 5 hours.
Prerequisite: STA 421/621.

An intensive study of research and methods of research in pharmacy care administration. The course includes the design, execution, and statistical analysis of experiments relating to physicians, pharmacists or drug consumers.

900. Research in the Pharmaceutical Sciences. 1-10 hours. (Max. 100 hrs.)

Prerequisite: Permission of school.
Independent laboratory investigation under faculty direction on approved problems in various fields of the pharmaceutical sciences. Maximum credit 100 hours with no more than 10 hours credit grade toward any one degree.

930. Thesis. 1-15 hours.

PHILOSOPHY

(PHY)

Frederick Ferre
(Peabody Hall, North Campus)

The department offers a comprehensive program, covering the major areas of philosophical study leading to the MA and the PhD degrees. Various approaches, including historical studies, linguistic analysis, logical analysis, and phenomenology are represented by the faculty. Particular areas of study emphasized are epistemology, ethics, history of philosophy, logic, metaphysics, philosophy of religion, philosophy of science, and political philosophy. Admission to the PhD program presupposes a thorough background in the history of philosophy. The graduate program is designed to give the student a broad and thorough training in the basic areas of philosophy with a specialization in some field of particular interest to him. Admission is restricted so as to encourage a close student-faculty relationship. Preparation for teaching is considered an integral part of the PhD program.

For the MA degree, reading knowledge of one foreign language is required; for the PhD, one foreign language is required and a second language and/or knowledge of areas cognate to philosophy may be required.

Unless otherwise stated, two senior division courses in philosophy are prerequisite to the following courses:

603. Phenomenology: Existential and Non-Existential. 5 hours.

Prerequisite: Recommended background — PHY 322 or equivalent.

A study of the starting points and basic method of phenomenology, considering both the fundamental positions of Husserl and their modification in the existential turn.

604. Classical American Philosophers. 5 hours.

Prerequisite: At least one course in philosophy other than 110.

A study of the major writings of C.S. Peirce, William James, and John Dewey and their influence on the development of contemporary philosophy.

605. Ethical Theory. 5 hours.

Prerequisite: PHY 305, two other courses in philosophy, or permission of department.

A study of the nature and justification of fundamental ethical concepts and moral principles.

606. Social and Political Philosophy. 5 hours.

Prerequisite: At least one course in philosophy other than 110.

Survey of such topics as the nature and function of society and the state, human freedom and rights, and the bases of social and political obligations.

608. (REL) Philosophy of Religion. 5 hours.

Prerequisite: Permission of department.

A critical study concerning the meaning, nature, and validity of religious discourse, beliefs, and practices, involving theories concerning the existence and nature of God and man's relation to God.

611. (ART) Aesthetics. 5 hours.

A critical survey of philosophical theories about the arts (for example, painting, literature, and music). Attention will be given to such topics as the function of art in society and the problem of justifying aesthetic judgments.

614. (LIN) Introduction to Philosophy of Language. 5 hours.

A critical study of topics such as formal and ordinary languages, meaning, reference, truth, definition, analyticity, ambiguity, metaphor, symbolism and the uses of language.

616. Philosophy of Law. 5 hours.

Prerequisite: Ten hours of philosophy, political science or law.

A study of the nature and function of law with emphasis on the interpretation and application of the law in the judicial process. Readings in the classical and contemporary schools of the philosophy of law.

618. Environmental Ethics. 5 hours.

Prerequisite: At least one course in philosophy.

A critical evaluation of major professional and nonprofessional writings in the field of environmental ethics.

632. Philosophy of Literature. 5 hours.

Prerequisite: At least one course in philosophy other than 110 or at least one course in English or foreign literature at the 200 level.

A study of the philosophic questions reflected in selected classics of world literature. Attention will also be given to the nature, functions and epistemic principles of the literary arts.

642. (LIN) Set Theory and Logic. 5 hours.
Prerequisite: PHY 110 or ten hours of mathematics beyond MAT 100 or permission of department.

An introduction to the basic concepts of set theory, emphasizing the impact of the paradoxes of the infinite, Russell's paradox, and applications of set theory to the foundations of mathematics.

643. (LIN) Symbolic Logic I. 5 hours.
Prerequisite: PHY 110 or permission of department.

A development of symbolic-mathematical logic, examining the propositional and predicate calculi with emphasis on problems in translation and formalization and topics in the philosophy of logic and mathematics.

644. Symbolic Logic II. 5 hours.
Prerequisite: PHY/LIN 442/642 or 443/643 or permission of department.

An advanced course dealing with both traditional and modern methods in logic, especially the contributions of symbolic and mathematical logic.

651. Technology and Values. 5 hours.
Prerequisite: At least one course in philosophy.

A study of technology in its broadest human context, with emphasis on the mutual influence between means and ends and the impact of technology on shaping the beliefs and attitudes of a civilization. Includes alternative assessments of technology and illustrates with specific crucial issues of our time.

658. History of Natural Science. 5 hours.
Prerequisite: Ten hours of science.

An examination of some major physical, biological, and cosmological theories and their philosophical import, 6th Century B.C. to the present.

659. Philosophy of Natural Science. 5 hours.
Prerequisite: PHY 101 or 110 or permission of department.

The investigation of such topics as the logical structure of scientific hypotheses and/or laws, and the problems of their meaning and confirmation; the general patterns of scientific explanation; and the ideals of prediction and control.

660. Metaphysics. 5 hours.
Prerequisite: At least one course in philosophy.

The problems of metaphysics and their relationship to other areas of philosophy.

661. Epistemology. 5 hours.
Prerequisite: At least one course in philosophy.

The problems of epistemology and their relationship to other areas of philosophy.

671. (SOC) Philosophy of Social Science. 5 hours.
See SOC 671.

674. Philosophy of Mind. 5 hours.
A critical study of the philosophical implications of alternative approaches to psychology such as the behavioral, the psychoanalytic, the phenomenological, with particular attention to such problematic areas as the nature, and validation of psychological concepts, laws, and theories, and knowledge of other minds.

800, 801, 802. Philosophical Systems of Plato, Aristotle, and the Middle Ages. 5 hours each.
Prerequisite: At least three courses in philosophy.

A study of the philosophical systems of the classical premodern philosophers. 800 deals with the thought of Plato, 801 with Aristotle and 802 with the Middle Ages.

808. Seminar in Philosophy of Religion. 5 hours. (Max. 15 hours.)

A critical study of major topics in the philosophy of religion such as the nature and existence of God, the problem of evil, and the character of religious discourse.

810A. Continental Rationalism: Descartes. 5 hours.

Prerequisite: At least three courses in philosophy.

The philosophy of Rene Descartes. Emphasis upon the *Meditations*, or *Discourse* and *Rules*.

810C. Continental Rationalism: Leibniz. 5 hours.

Prerequisite: At least three courses in philosophy.

The philosophy of Gottfried Wilhelm Leibniz. Readings selected from various manuscripts as well as published works.

811B. British Empiricism: Berkeley. 5 hours.
Prerequisite: At least three courses in philosophy.

The philosophy of George Berkeley. Emphasis upon the *Principles* or *Dialogues*.

811C. British Empiricism: Hume. 5 hours.
Prerequisite: At least three courses in philosophy.

The philosophy of David Hume. Emphasis upon the *Treatise*, *Inquiries*, or *Dialogues*.

812. Kant. 5 hours.

Prerequisite: At least three courses in philosophy.

The philosophy of Kant.

814C. Recent and Contemporary Philosophy. 5 hours.

Prerequisite: At least three courses in philosophy.

A critical study of recent and contemporary philosophical positions such as logical empiricism, pragmatism, analysis, Marxism and existentialism.

819. (LIN) Seminar in the Philosophy of Language. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours advanced work in philosophy or permission of department.

A critical study of the original source materials dealing with such topics as formal and ordinary languages, meaning, reference, descriptions, truth, definition, analyticity, speech acts, and the uses of language.

820. Seminar in History of Philosophy. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy or permission of department.

A study of philosophical topics and problems as found in the works of ancient, medieval, and modern philosophers.

830. Seminar in Political Philosophy. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy or permission of department.

A critical analysis of problems and topics in classical and contemporary political philosophy.

840. Seminar in Ethics. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy or permission of department.

A critical analysis of problems and topics in classical and contemporary moral philosophy.

849. (LIN) Seminar in Problems of Logic. 5 hours. (Max. 15 hours.)

Prerequisite: PHY 444/644 or its equivalent.

An investigation into some of the major problems in contemporary logic, such as semiotics, deductive systems, metamathematics and the problems of induction.

859. Seminar in Philosophy of Science. 5 hours. (Max. 15 hours.)

Prerequisite: PHY 444/644 or equivalent.

A critical study of basic concepts in science such as explanation, description, prediction, law, cause, theory, confirmation, probability, observation and measurement.

860. Seminar in Metaphysics and Epistemology. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy or permission of department.

A critical study of various metaphysical systems and theories of knowledge and related problems in these areas.

870. Problems and Topics in Philosophy. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy.

A systematic study of philosophical positions and problems.

880. Readings and Research in Special Problems in Philosophy. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy.

Directed reading and research in philosophy in area(s) of a student's special interest.

930. Thesis. 1-15 hours.

PHYSICS AND ASTRONOMY

Robert L. Anderson
(Physics Building, South Campus)

The Department of Physics and Astronomy offers graduate work leading to the MS and PhD degrees in physics. No foreign language is required for the master's or doctoral degrees. The major research in the department is conducted in the following fields: atomic and molecular physics, nuclear physics, condensed matter physics, optics, relativity, high energy physics, mathematical physics, and low temperature physics. Experimental research is conducted in on-campus laboratories for nuclear physics, atomic and molecular physics, low temperature physics, and condensed matter physics, and simulational physics. In addition to these, the experimental facilities at the Oak Ridge National Laboratory and the Indiana University Cyclotron Facility are available and are used quite frequently. Research in the above areas is aided by the facilities of the Computer Center.

Prospective students desiring financial aid should submit all application material by February 15.

PHYSICS (PCS)

600. Physics Seminar. 1 hour.
Discussion of contemporary topics in physics.

604. Theoretical Mechanics. 4 hours.
Prerequisite: PCS 239 (229) and MAT 358.
Statics, kinematics, and dynamics of a particle and of systems of particles.

620. Electricity and Magnetism. 4 hours.
Prerequisite: PCS 239 (229) and MAT 459/659 or PCS 404/604.
Experimental foundations; development of Maxwell's equations.

625. Electronics and Electrical Aids to Measurements. 5 hours. Four hours of recitation and three hours of lab.
Prerequisite: PCS 239 (229) and MAT 254.
Circuit theory; basic electronic devices; amplifiers; feedback; pulse and digital circuits.

630. Thermodynamics and Kinetic Theory. 4 hours.

Prerequisite: PCS 239 (229) and MAT 358.
The laws of thermodynamics and their application to physical systems. Kinetic theory.

640. Classical Theoretical Physics. 4 hours.
Prerequisite: PCS 404/604 and 420/620.
Methods of problem solving and formal developments in mechanics including the formulations of Lagrange and Hamilton. Applications of Maxwell's equations.

650. Atomic Physics and Quantum Mechanics I. 4 hours.
Prerequisite: PCS 404/604 or 420/620.
Development of wave mechanics with applications to atomic structure.

651. Atomic Physics and Quantum Mechanics II. 4 hours.
Prerequisite: PCS 450/650.
Development of wave mechanics with applications to atomic and molecular structure.

667. Experimental Physics. 3-10 hours.
Prerequisite: PCS 450/650.
Laboratory courses in which the student uses modern experimental techniques to investigate phenomena in atomic, molecular, nuclear, and solid state physics.

672. Nuclear Structure. 4 hours.
Prerequisite: PCS 450/650.
Introduction to the theory of nuclear structure as it has been inferred from quantum mechanical considerations and the study of experimental data on radioactivity and nuclear reactions.

682. Condensed Matter Physics. 4 hours.
Prerequisite: PCS 430/630 and 450/650.
Elastic, thermal, electrical, magnetic and optical properties of condensed matter. Covers such topics as: crystal structure, symmetry operators, x-ray and neutron diffraction, lattice vibrations, thermal properties, electrons in metals and semiconductors, dielectric and optical properties, magnetism and magnetic resonance, superconductivity and quantum fluids.

727. Introductory Physics for Teachers — Mechanics and Wave Motion. 5 hours. Four hours of recitation and two hours of laboratory.
Prerequisite: MAT 109 or 116.
This course is designed to aid the introductory physics teacher in dealing with problems in mechanics and wave motion which may arise in his/her teaching. The effective presentation of physical concepts in this area will be emphasized. (Credit is limited to students working for a degree in education.)

728. Introductory Physics for Teachers - Thermodynamics, Electricity and Magnetism.

5 hours. Four hours of recitation and two hours of laboratory.

Prerequisite: Fifteen hours of physics.

This course is designed to aid the introductory physics teacher in dealing with problems in thermodynamics and electricity and magnetism which may arise in his/her teaching. The effective presentation of physical concepts in these areas will be emphasized. Credit is limited to students working for a degree in education.

729. Introductory Physics for Teachers -Optics and Modern Physics. 5 hours. Four hours of recitation and two hours of laboratory.

Prerequisite: Fifteen hours of physics.

This course is designed to aid the introductory physics teacher in dealing with problems in optics and modern physics which arise in his/her teaching. The effective presentation of physical concepts in these areas will be emphasized. Credit is limited to students working for a degree in education.

801, 802. Advanced Analytical Mechanics. 5 hours each.

Prerequisite for 801: PCS 404/604.

Systems of particles, D'Alembert's principle, principle of least action, Hamilton's principle, generalized coordinates, Poisson brackets, and the Hamilton-Jacobi equation.

810, 811, 812. Quantum Mechanics. 5 hours each.

Prerequisite for 810: PCS 440/640, 802 and 841.

Basic principles of quantum theory, wave mechanics, and the application of these principles to problems in modern physics.

815, 816. Advanced Quantum Theory. 5 hours each.

Prerequisite: PCS 812 and 822.

Relativistic quantum mechanics and quantum field theory.

817, 818. Quantum Theory of Scattering with Applications. 5 hours each.

Prerequisite: PCS 812.

The formal and practical aspects of the quantum theory of scattering will be developed. Applications to atomic, nuclear and elementary particle physics will be integrated to illustrate the techniques learned.

820, 821, 822. Advanced Electromagnetic Theory. 5 hours each.

Prerequisite for 820: PCS 440/640 and 841.

Maxwell's equations are assumed initially and used to investigate classical electromagnetic phenomena. A formulation of the field equa-

tions is developed in a space-time continuum. Beginning with the static phenomena the study will include the theory of multipoles, the radiation and propagation of electromagnetic waves, and the related reflection, refraction, diffraction and dispersion phenomena.

825, 826. Relativity. 5 hours each.

Prerequisite: Permission of department.

An introduction to Einstein's general theory of relativity. Topics include: mathematical background, fundamental field equations of Einstein's theory of gravitation and their extension to include electromagnetic phenomena, exact solutions to Einstein's field equations, particle structure and motion, gravitational radiation, gravitational collapse and black holes, cosmology, experimental tests, unified field theory.

830, 831. Statistical Mechanics. 5 hours each.

Prerequisite for 830: PCS 812.

A study of the basic theory of statistical mechanics and its applications to the solution of some fundamental problems in physics.

840, 841, 842. Methods of Theoretical Physics. 5, 3, 3 hours respectively.

Prerequisite for 840: MAT 358.

Treatment of theoretical problems in physics (mechanics, electromagnetism, wave mechanics, heat flow, acoustics, etc.) by means of differential and integral equations, Green's functions, vector and tensor analysis, and perturbative, variational and group theoretical methods, and algebra and group theory.

850, 851. Molecular Spectra and Structure of Diatomic and Polyatomic Molecules. 5 hours each. Three hours recitation per week.

Prerequisite for 850: PCS 450/650; 810.

A study of the structure of molecules as may be determined from their rotational, vibrational, and electronic spectra. The theory of molecular spectra will be presented for diatomic and selected polyatomic molecules.

873, 874. Nuclear Theory. 5 hours each.

Prerequisite for 873: PCS 472/672 and 812.

A course in advanced nuclear theory. Some of the topics covered are multipole radiations, polarization phenomena, resonance theory, and nuclear scattering phenomena.

876, 877, 878. Elementary Particle Physics. 5 hours each.

Prerequisite: PCS 812.

Corequisite: PCS 816 for PCS 878.

Basic concepts, symmetries and invariance principles, strong interactions, weak interactions, particle models, high energy scatterings, gauge theories and current topics.

882, 883. Advanced Solid State Physics. 5 hours each.

Prerequisite for 882: PCS 482/682 and 810.

A discussion of the quantum theory of solids.

890. Advanced Topics. 5-15 hours.

Prerequisite: PCS 810.

This course consists of current and advanced topics in physics.

900. Research in Physics and Astronomy. 1-15 hours. (Max. 100 hours.)

Prerequisite: Permission of department.

Independent investigation of research problems in various fields of physics and astronomy under the direction of individual staff members.

901. Introduction to Research. 1-5 hours.

Prerequisite: Student must be a prospective candidate for an MS or PhD degree in physics. An introduction to at least two research areas in physics will be provided by instructors who are actively engaged in research.

930. Thesis. 1-15 hours.

ASTRONOMY (AST)

791. Astronomy for Teachers. 5 hours.

A survey of the planetary system followed by a more extensive discussion of galactic and stellar structure and evolution, exterior galaxies and cosmology based on modern astrophysical theories and techniques. Not open to students with credit in AST 107, 108, 291 or 297H.

PHYSIOLOGY AND PHARMA- COLOGY (VPH)

Benjamin G. Brackett

(Veterinary Medicine Building, South Campus)

Doctoral language requirement: one foreign language.

Candidates for the Master of Science and Doctor of Philosophy in physiology or pharmacology must have a baccalaureate or a Doctor of Veterinary Medicine degree from an accredited college or university. Requirements for admission include: a grade point average of 3.25 with a BS or MS, or ranking in the upper half of the class with a DVM degree, or other medical professional degree, and an interest in one of the areas of ongoing research. Programs of study emphasize the disciplines of physiology, pharmacology, or toxicology with opportunities to concentrate on specific organ systems and on clinical medicine.

Completion of the Graduate Record Examinations including the Advanced Biology section with a minimum combined score of 1100 on the verbal and quantitative portions is expected. Certain minimum requirements in addition to those required by the Graduate School must be met. For the Doctor of Philosophy degree, any undergraduate deficiencies in biological sciences, chemistry, mathematics, languages, or physics must be made up early in a program of study.

605. Animal Physiological Chemistry. 3 hours.

Prerequisite: Permission of department.

Chemistry of cellular constituents and an introduction to the chemical process of living systems. Integrated functional aspects of the metabolic, respiratory and transport systems of the animal body from a chemical standpoint.

609. Comparative Mammalian Physiology. 5 hours.

Prerequisite: Permission of department.

A presentation of the animal body as a single functioning organism including neurophysiology, cardiovascular, and respiratory.

610. Comparative Mammalian Physiology. 5 hours.

Prerequisite: Permission of department.

A presentation of the animal body as a single functioning organism including endocrinology, reproduction, renal, and alimentary physiology. (Winter quarter.)

630. Veterinary Medical Pharmacology. 5 hours.

Prerequisite: Permission of department.

Pharmacodynamics of drugs currently used in veterinary medicine. (Winter quarter.)

631. Veterinary Medical Pharmacology. 4 hours. Four lectures and one 3-hour lab or demonstration period.

Prerequisite: VPH 430/630.

A continuation of VPH 430/630. (Spring quarter.)

660. Physiology of Aging. 1-3 hours.

Prerequisite: VPH 310 or equivalent; permission of department.

A comprehensive survey of the physiological changes associated with aging. The changes in each body system are described on an organ, cellular, subcellular, and molecular basis. (Winter quarter.)

806. Cardiovascular Physiology. 3 hours.

Prerequisite: VPH 609 or permission of department.

Advanced study of current concepts in cardiovascular physiology. (Summer quarter of odd numbered years.)

807. Respiratory Physiology. 3 hours.

Prerequisite: VPH 609 or permission of department.

Advanced study of current concepts in respiratory physiology. (Summer quarter of odd numbered years.)

810. Comparative Medical Endocrinology. 3 hours.

Prerequisite: VPH 610 or permission of department.

Advanced study of current concepts in endocrinology and its relevance in domestic animal medicine. (Summer quarter of even numbered years.)

812. Renal and Fluid-electrolyte Physiology. 3 hours.

Prerequisite: VPH 610 or permission of department.

Advanced study of current concepts in renal and fluid-electrolyte physiology. (Summer quarter of even numbered years.)

840. Neurophysiology. 5 hours.

Prerequisite: Permission of department.

A comprehensive study of the nervous system, stressing biophysics and clinical neurology. (Fall quarter of odd numbered years.)

845. Chemotherapy. 3 hours.

Prerequisite: Permission of department.

Presentation and discussion of current knowledge of chemotherapeutic agents and their clinical evaluation. (Spring quarter of odd numbered years.)

846. (PHR) Molecular Pharmacology. 5 hours.

See PHR 846. (Spring quarter of even numbered years.)

890. Physiology-Pharmacology Seminar. 1 hour.

Prerequisite: Permission of department.

Presentation of current research findings and methodology in physiology, pharmacology, or toxicology.

900. Research in Physiology. 1-15 hours.

Prerequisite: Permission of department.

Intensive study of an approved experimental problem in physiology.

901. Research in Pharmacology or Toxicology. 1-15 hours. (Max. 15 hrs.)

Prerequisite: Adequate academic experience in pharmacology or toxicology.

Intensive study of an approved experimental problem in pharmacology or toxicology.

930. Thesis. 1-15 hours.

PLANT PATHOLOGY (PAT)

W.N. Garrett
(Miller Plant Sciences Building, South
Campus)

Doctoral language requirement: one foreign language.

Plant Pathology offers three graduate programs: MS, PhD, and a professional Master of Plant Protection and Pest Management degree (MPPPM). The division has a strong tradition in scholarship in the area of mycology and has an international reputation for research on diseases of apples, cotton, cowpeas, peaches, peanuts, pecans, small grains, soybeans, tobacco, and vegetables. Currently, active research and teaching programs are being conducted in all major areas of plant pathology involving many different crops.

The MS and PhD degrees are traditional academic degree programs which demand creative scholarship, technologic skill, and philosophic soundness. These programs emphasize the development of scientists who have the ability to fill positions of leadership in teaching, research, and administration. To achieve such goals of excellence, the student must be highly motivated and must make a commitment to the understanding of plant pathology so that biological principles can be developed and applied. Students may specialize in plant pathology, or mycology. Those specializing in plant pathology may choose to emphasize general pathology, bacteriology, nematology, virology, or physiology of disease. Mycology areas of emphasis include morphology, taxonomy, physiology of fungi, or genetics.

The MPPPM program is designed to produce graduates with comprehensive, multidisciplinary training in plant pathology, entomology, and agronomy. Details of this program may be found on page 44.

All three department in the Division of Plant Pathology (Athens, Experiment, and Tifton) are well-equipped with modern instrumentation, greenhouses, and other facilities for graduate research. Land for field studies is

located at main and branch experiment stations at several locations throughout Georgia in different climatic regions and major crop growing areas. A Plant Disease Clinic operated by the Extension Plant Pathology Department is used to give students practical training in disease diagnosis and control.

Prospective students who are interested in financial aid should file an application with the department; they will be considered for any Graduate School, College of Agriculture, or department assistantship for which they are eligible.

606. Etiology of Plant Diseases. 5 hours. Three lectures and two lab periods.

Prerequisite: PAT 353.

A study of the non-mycological causes of infectious diseases of higher plants, with special reference to the biological characteristics and phytopathogenic mechanisms of viruses, bacteria and nematodes. (Winter quarter.)

613AB. (ENT) Internship in Crop Protection and Pest Management. 1 hour each.

Prerequisite: Must be enrolled in professional Master's Plant Protection and Pest Management degree program.

An intern program where the student will be involved and become familiar with the applied aspects of plant protection and pest management. (Offered every quarter.)

620. (BOT) Introductory Mycology. 5 hours. Three lectures and two lab periods.

Prerequisite: BIO 101, 102 or BOT 121, 122.

An introduction to the biology of the fungi, including a survey of all classes. (Fall and Spring quarters.)

625. Plant Nematology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: PAT 353 or 383.

Morphology and taxonomy of plant parasitic nematodes, with emphasis on characters used in identification. (Winter quarter.)

628. Diagnosis and Control of Plant Diseases. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: PAT 353 or equivalent.

Development of fundamental and practical knowledge for identification and control of plant diseases. (Fall quarter.)

701. Advanced Forest Pathology. 5 hours.

Prerequisite: FRS 320 or permission of department.

A study of principles and techniques of diagnosing and controlling diseases of trees and woody plants with special emphasis on disease development, implications for urban forestry and forest management.

815. Advanced Plant Pathology and Plant Breeding Seminar. 1 hour. (Max. 6 hours.)

Presentation of papers and discussion of research in plant pathology and genetics. (Fall, Winter, Spring quarters.)

820. Applied Mycology. 5 hours.

Prerequisite: PAT 420/620.

This course is designed to provide students with training in the collection and identification of fungi in their natural habitats. Specimens collected in the field will be brought into the laboratory and identified using current taxonomic literature. Instruction will also be given in the various methods of preserving fungi. (Summer quarter of even numbered years.)

821. (BOT) Biology of Ascomycetes. 5 hours.

Three lectures and two lab periods.

A study of the comparative morphology of the Ascomycetes and their conidial stages (Fungi imperfecti), principles of taxonomy, and training in identification. (Spring quarter of odd numbered years.)

827. Biology of Plant Parasitic Nematodes. 5 hours. Three lectures and two lab periods.

Prerequisite: PAT 425/625 or permission of department.

A study of the biology, physiology and ecology of plant parasitic nematodes with special reference to phytopathogenic mechanisms, host responses to infection and nematode physiology. (Winter quarter of odd numbered years.)

829. Bacterial Plant Pathogens. 5 hours. Three lectures and two lab periods.

Prerequisite: Basic courses in plant pathology, MIB 350 or equivalent.

The plant pathogenic bacteria, their isolation, identification, inoculation and control. (Winter quarter of odd numbered years.)

831. Epidemiology of Plant Diseases. 5 hours.

Prerequisite: PAT 353.

A study of factors which alter the course of disease epidemics in plant populations. Techniques for qualitative and quantitative measurement of these factors will be discussed and demonstrated. (Spring quarter of odd numbered years.)

832. (BOT) Biology of Phycomycetes. 5 hours.

See BOT 832.

833. (BOT) Biology of Basidiomycetes. 5 hours.

See BOT 833.

835. Plant Virology. 5 hours. Three lectures and two lab periods.

Prerequisite: PAT 353 or 383 or equivalent.

The nature of plant viruses, their identification, host relations, transmission, purification, serology, and control. (Spring quarter of even numbered years.)

840. Host-Pathogen Interactions. 5 hours.

Prerequisite: PAT 353 and GEN 358.

Principles of genetics of parasitism, physiology of parasitism, and disease resistance. The integrated study of how the genetic basis for host-pathogen compatibility and incompatibility is related to the structural, physiological, and biochemical responses in diseased plants and to mechanisms of resistance. (Spring quarter of odd numbered years.)

900. Research in Plant Pathology. 1-10 hours. (Max. 75 hours.)

Prerequisite: Permission of department.

This course permits students to pursue intensive study or independent research projects under the direction of faculty members. Maximum credit of 75 hours with no more than 10 hours credit with grade toward any degree.

930. Thesis. 1-15 hours.

POLITICAL SCIENCE (POL)

Frank J. Thompson
(Baldwin Hall, North Campus)

Doctoral language requirement: one foreign language, or proficiency in use of a research tool to be determined by the department.

The Department of Political Science offers programs leading to MA, MPA, DPA, and PhD degrees. At the PhD level the department offers eight fields of study, plus a variety of specialized curricula. The candidate selects three fields of study.

The Master of Public Administration degree is designed for those persons planning to enter, or who are already a part of, the public service. Further details of the program may be found on page 44. Also, further details on the DPA program may be found on page 52.

All degree programs are increasingly oriented to the systematic study and analysis of political phenomena.

600. American Political Thought. 5 hours.

A detailed examination of the ideas about human nature and government that have shaped political practice and debate in America, focussing on primary sources. Attention will be given to the principles of the Declaration of Independence and the Constitution, as developed especially by Jefferson, Madison, and Hamilton, and to interpretation of these principles by such statesmen as Lincoln and Wilson. Other topics include Black political thought and current liberal-conservative debate.

601. Political Philosophy: Plato to Machiavelli. 5 hours.

Prerequisite: POL 101 or equivalent.
Analysis of selected works of such writers as Plato, Aristotle, Cicero, St. Augustine, and St. Thomas, concluding with the rejection of classical thought by Machiavelli.

602. Political Philosophy: Hobbes to Nietzsche. 5 hours.

Prerequisite: POL 101 or equivalent.
A study of the development of modern political philosophy through the analysis of selected works of such writers as Hobbes, Locke, Hume, Rousseau, Mill, Marx, and Nietzsche.

603. Contemporary Political Thought. 5 hours. Prerequisite: POL 101 or equivalent.

A study of major issues in twentieth-century political thought. Attention will be given also to the theoretical roots of major contemporary ideologies.

606. Theory of Political Organization. 5 hours. Prerequisite: POL 101 or equivalent.

An examination of how different political arrangements affect both the results of political processes and the opportunities for political participation. Consideration will be given to systems, institutional, cultural, group, and elite approaches.

607. Theories of Political Choice. 5 hours.

Prerequisite: POL 101 or equivalent.
Analysis and evaluation of methods for individual choice in the face of political alternatives. Emphasis will be given to the role of individual decision-making in orienting political behavior, and determining how and when political actors come into conflict or behave cooperatively.

608. Problems in Democratic Theory. 5 hours. Prerequisite: POL 101 or equivalent.

A study of major problems that arise in theoretical discussions of democracy, such as the nature of democratic government, its purposes, its justification, its limitations, and the conditions necessary for its maintenance.

610. American Political Parties. 5 hours.

Prerequisite: POL 101 or equivalent.
A study of organized groups whose purpose is to influence or control government in the U.S. Particular emphasis will be placed on the structure and activities of the two major political parties. The future of the American party system will be considered.

611. Electoral Behavior. 5 hours.

Prerequisite: POL 101 or equivalent.
An examination of the factors which contribute to electoral choice and the dynamics of voting in the American political system.

613. Government and Interest Groups. 5 hours.

Prerequisite: POL 101 or equivalent.
A study of the major organized agrarian, labor, business, professional and other special interest groups that regularly participate in the formation of public policy.

614. The Legislative Process. 5 hours.

Prerequisite: POL 101 or equivalent.
A study of the U.S. Congress with emphasis on recruitment and composition of leadership, procedures, and the role of parties and interest groups. Recent changes in the Congress

will be examined in light of theories of representation.

615. The United States Presidency. 5 hours.

Prerequisite: POL 101 or equivalent.

A historical examination of the President of the United States. The President's constitutional position will be addressed, including theories of executive dominance and executive privilege. Attention will also be given to the President's attempts to control the executive branch and presidential-congressional relations.

616. Political Socialization. 5 hours.

Prerequisite: POL 101 or equivalent.

An examination of the theories and concepts associated with attitude and opinion formulation and socialization in both mass and elite publics.

620. Pre-Seminar in International Relations.

5 hours.

A survey of the major approaches to the study of international relations, including traditional, behavioral, and post-behavioral concepts and methods. Recommended for all students considering more advanced work in international relations.

621. International Organization. 5 hours.

Prerequisite: POL 101 or equivalent.

The origins and evolution of international organizations, with emphasis on the United Nations and the specialized agencies. Factors favoring and impeding their development. Their effect on political, economic, and social issues. Research using U.N. publications.

622. International Law. 5 hours.

Prerequisite: POL 101 or equivalent.

Readings, cases, lectures and research on the functioning of the legal structures in the international system with special emphasis on the relation between law and politics.

625. American Foreign Policy. 5 hours.

Prerequisite: POL 101 or equivalent.

An analysis of domestic and international sources and consequences of American foreign policy. Emphasis on the role of American institutions and processes in making policy on national security and interdependence issues. Paper is usually required.

626. International Conflict. 5 hours.

Prerequisite: POL 101 or equivalent.

Causes, consequences, and management of violence between countries. Analysis of principal theoretical viewpoints, e.g., human aggressiveness, elite aims and ambitions, misperceptions and accidents, imperialism, socio-economic gaps, and systemic failure.

630A. Pre-Seminar in Comparative Analysis. 5 hours.

An introduction to the issues, approaches, and methods of comparative policy analysis.

631. Political Development. 5 hours.

Prerequisite: POL 101 or equivalent.

A comprehensive overview of the socio-political dynamics in the process of institutional development, industrialization, and modernization. An examination of explanatory and predictive factors affecting the quality of life in changing societies.

632. Communist Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.

A comparative study of three contemporary Communist Party states: the Soviet Union, China, and Yugoslavia. The course examines similarities and differences with particular emphasis on domestic policy.

633. European Communism. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the contemporary domestic and foreign policies of the Communist states of Europe and the Soviet Union. Students will experience policy planning and decision-making through their involvement in the Communist State Simulation.

634. Latin American Political Systems. 5 hours.

A comparative analysis of the political systems of Central and South America with emphasis on the concepts of political stability, conflict, revolution, economic development and modernization.

635. Western European Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.

Politics and process in Western European political systems. Emphasis will be focused on comparative analysis with examples drawn from the full range of European parliamentary democracies.

638. African Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the social structure, political culture and political dynamics of Sub-Saharan African systems with emphasis on West Africa.

639. Far Eastern Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.

An interdisciplinary analysis of social, cultural, and political processes in three profoundly contrasting Far Eastern nations including China, Japan, and Korea. Both domestic and international issues will be examined.

641. Principles of Public Administration. 5 hours.

A study of administrative organization, relationships, and controls in the United States with emphasis on national public administration. Emphasis is given to current research in organization, personnel, and budgeting.

642. Public Personnel Administration. 5 hours.
Prerequisite: POL 101 or equivalent.

Procedures and problems of governmental personnel administration. Human relations aspects. Studies of governmental agencies are employed to give the students first-hand knowledge of governmental personnel administration.

643. Public Financial Administration. 5 hours.
Prerequisite: POL 101 or equivalent.

Activities involved in the collection, custody and expenditure of public revenue, such as the assessment and collection of taxes, public borrowing and debt administration, the preparation and enactment of the budget, financial accountability and the audit.

644. Government and Business. 5 hours.

Economic bases and guidelines for government; intervention; the policy of maintaining competition; role of anti-trust policy in a private enterprise economy; character and limitations of the law.

645. Comparative Administration. 5 hours.

Prerequisite: POL 101 or equivalent.

A study, using the comparative approach, of the existing administrative structures, institutions, and procedures of selected national states. Areas of emphasis will include the ecology of administration in both highly developed and underdeveloped states.

646. Government Organization and Administration Theory. 5 hours.

Prerequisite: POL 101 or equivalent.

A systematic analysis of theories of organization, management and administration. Special consideration will be given to institutional, behavioral, and psychological factors.

647. Criminal Justice Process. 5 hours.

Introduction to the cultural, psychological, political and legal perspectives of criminal justice, with emphasis on theories of control of deviant behavior through law. Theoretical focus will prepare students for understanding current problems of criminal justice.

648. Criminal Justice Policy Analysis. 5 hours.

Prerequisite: POL 647.

An analysis of the organizational structure of police agencies and criminal courts, with em-

phasis on methods for improving the efficiency and effectiveness of these agencies.

649. Personnel Problems in Public Agencies. 5 hours.

Prerequisite: POL 101 or permission of department.

In-depth treatment of selected problems in public personnel administration, using case studies and other vehicles to simulate realistic situations encountered in public agencies. Major emphasis on developing analytical and behavioral skills applicable in public personnel administration.

650. Internship in Government. 5-15 hours.

Prerequisite: Acceptance to the MPA or DPA program and permission of graduate coordinator.

This course is designed for the academic portion of government internship programs on a graduate level. It does not apply toward a program of study but meets the requirements for internship in the MPA degree. Limited to department majors.

651. Policy Analysis. 5 hours.

Systematic survey of the theoretical approaches and concepts associated with the empirical analysis of public policies. Intended to acquaint students with policy analysis and prepare them for scholarly research in the area.

662. Urban Administration and Policy. 5 hours.

Prerequisite: POL 101 or equivalent.

General analysis of principles and issues of administering city governments in United States and selected foreign countries. Problems of local governmental managing, budgeting, planning and delivering urban services will be emphasized.

663. Urban Political Behavior. 5 hours.

Prerequisite: POL 101 or equivalent.

A comparative study of political behavior within urban and metropolitan areas. This course will examine voting and interest group behavior among urban residents. Specific attention is paid to the relationship between citizen participation and public policy outcomes in urban governments.

665. State Government. 5 hours.

The politics of policy-making at the state level. An emphasis is placed on a comparative policy perspective with regionalism serving as a central focus for study. Various models and theories of state policy-making will be examined.

668. Federalism. 5 hours.

Prerequisite: POL 101 or equivalent.

An analysis of intergovernmental relations within the United States and other federal systems. Attention is paid to issues of intergovernmental fiscal policy, administration, and organizational theories.

680. The Constitution of Georgia. 5 hours.

Prerequisite: POL 101 or equivalent.

An historical survey of the evolution of the Constitution of Georgia followed by a detailed study of the present constitution through decisions and opinions of the Supreme Court of Georgia.

682. American Constitutional Law I. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the origins of American constitutionalism and judicial review, and the structure and practices of courts in interpreting the Constitution. Written paper and briefs.

683. American Constitutional Law II. 5 hours.

Prerequisite: POL 101 or equivalent.

The substantive constitutional law of the separation of powers, national and state regulatory powers, and the federal system; and the role of courts in public policy-making in these areas. Written paper and/or case briefs.

684. American Constitutional Law III. 5 hours.

Prerequisite: POL 101 or equivalent.

The substantive constitutional law of individual and minority group rights and liberties, and fair trial rights; and the role of the courts in public policy-making in these areas. Written paper and/or case briefs.

688. Judicial Behavior and Modern Jurisprudence. 5 hours.

Prerequisite: POL 101 or equivalent.

Theoretical and empirical approaches to the study of the U.S. court systems as a part of the total political system.

689. Administrative Law. 5 hours.

Prerequisite: POL 101 or equivalent.

The legal principles and practical doctrines involved in the work of administrative agencies vested with quasi-legislative or quasi-judicial powers.

701. Methodology in Political Science. 5 hours.

An examination of basic scientific methods, broadly defined, to include problems of definition, concept formation, hypothesis testing, explanation and prediction, and theory construction.

702. Political Research Design and Data Analysis. 5 hours.

Prerequisite: POL 701 or permission of department.

A critical analysis of research problems in political science which are susceptible to the use of quantitative techniques.

743. Public Financial Management. 5 hours.

Prerequisite: POL 443/643 or permission of department.

Course covers the principal aspects of public financial management including accounting, budgeting, capital budgeting, revenue forecasting, risk management, pension management and auditing.

750. Global Policy Internship. 5-10 hours.

Prerequisite: Ten hours of POL 620, 630A and 651 or equivalent.

This course is designed as the academic portion of an internship providing field experience in global policy studies. It does not apply toward a program of study but meets the requirement for an internship for the Certificate in Global Policy Studies. A paper is required as part of this internship.

803. Interdisciplinary Theory in Political Science. 5 hours.

Prerequisite: POL 701 or permission of department.

This course highlights the contributions made to the study of human behavior in politics by theoretical approaches developed in the other behavioral and social sciences. Particular attention is given (1) role theory, (2) personality theory, (3) psychology of adjustments, (4) the attitude change literature, (5) utility-maximizing models of human behavior, (6) organization theory, (7) reductionism, (8) communication theory, and (9) theories of social conflict.

808. Empirical Political Theory. 5 hours.

Prerequisite: POL 701.

This course provides a critical examination of the principal empirically oriented models and theories used in political science. The works of major empirical political theorists will be reviewed.

810. Seminar in Political Behavior. 5 hours.

Prerequisite: Permission of department.

An examination of concepts, theories and methods in micro level political analysis.

811A. Political Opinion and Electoral Behavior. 5 hours.

A research seminar on political opinion and voting behavior, with emphasis on psychologi-

cal, social, and political determinants. Techniques of survey research are also covered.

812. Seminar in American Government. 5 hours.

An advanced, intensive study of American Government with particular emphasis upon American governmental institutions and processes.

813. Research in Political Parties and Interest Groups. 5 hours.

Prerequisite: POL 410/610 or 413/613, or permission of department.

A research seminar dealing with cross-national analysis theory and research on political parties and interest groups, in terms of their functions in the political system, influence on public policy, and internal operation.

814. Research in the Legislative Process. 5 hours.

Prerequisite: POL 414/614 or permission of department.

Theory and research in comparative legislative institutions and behavior among nations and localities, with emphasis on parties, committees, recruitment and socialization, decision-making, and linkages to other elements of the political system. Distinctive methods available include roll-call analysis, examination of committees as social systems, and use of election data.

815. (FIN) Metropolitan Fiscal Problems. 5 hours.

See FIN 815.

818AB. Readings and Research in American Government. 5 hours each.

Independent study of selected topics and problems in American Government.

819A. Readings and Research in Political Behavior. 5 hours.

Readings and research in selected topics on political behavior.

820. Readings and Research in International Politics. 5 hours.

Prerequisite: POL 620.

An advanced seminar in the major approaches to the study of international politics.

821. International Cooperation and Organization. 5 hours.

Prerequisite: POL 620.

An advanced seminar in the principles, structure, and practices of international organizations and their effects on the creation of a peaceful and just world order.

822. International Law and Diplomacy. 5 hours.

Prerequisite: POL 620.

An advanced seminar to provide intensive small group instruction and research on current and futuristic legal problems and negotiations in the global community.

824. International Futures. 5 hours.

Prerequisite: POL 620.

A study of proposals, possibilities, and prerequisites for the transformation of the sovereign state system into a more peaceful and just world order.

825. (HIS) Foreign Policy. 5 hours.

Prerequisite: A course in international relations or permission of department.

An advanced study of both the domestic and international sources, content, and consequences of a state's efforts either to influence, or to adapt itself, to other states' behavior.

827. International Political Economy. 5 hours.

Prerequisite: POL 620.

This course examines various aspects of the international economy both theoretical and practical, essential to an understanding of modern diplomacy and the conduct of foreign affairs.

831AB. Seminar in Developed Political Systems. 5 hours each.

Prerequisite: POL 630A.

An intensive study of selected special problems in the comparative study of developed political systems.

832AB. Seminar in Developing Political Systems. 5 hours each.

Prerequisite: POL 630A.

Readings and research in the theory of creating integrated, viable, modernizing political systems in a world of economic inequalities. The focus is on the kinds of political institutions that can help manage the social stress of racial, ethnic, cultural, social, economic, technological and ideological diversity.

833A. Seminar in Communist Political Systems. 5 hours.

A research seminar emphasizing the political processes, ideology, and change in the USSR, Yugoslavia, China and other Communist states.

833B. (HIS) Seminar in Communist Political Systems. 5 hours.

A research seminar emphasizing the political processes, ideology, and change in the USSR, Yugoslavia, China and other Communist states.

837. (FIN) Quantitative Analysis for Public Decision-Making. 5 hours.

See FIN 837

841. Problems in Public Administration. 5 hours.

A course designed to provide individual or small group instruction for graduate students interested in advanced problems in public administration.

842AB. Seminar in Selected Problems in Public Personnel Administration. 5 hours each.

Deals with the development of the collective negotiations movement. Stresses analysis of key policy issues, such as bargaining rights and the use of the strike weapon. Considers alternative procedures for resolving conflict between public employees and management.

843. Seminar in Public Budgeting. 5 hours.

A detailed examination of methods and research in public budgeting in the policy and decision-making processes. Both the practices and theory of budgeting are examined. Particular attention is given to the concept of the Planning-Programming-Budgeting System and its implications for governmental operations.

845. Seminar in Comparative Public Administration. 5-10 hours.

Research oriented seminar for advanced students in political science. A comparative analysis of administrative structures and processes in different cultural and political settings.

846. Seminar in Government Organization and Administrative Theory. 5 hours.

Prerequisite: POL 446/646 or permission of department.

This course is designed to provide individual or group research on various theories of organization, management, and public administration as they relate to the study of government organizations. Special attention will be given to the design of appropriate research focusing on the institutional and behavioral elements of organization.

847. Seminar in Information Processing in Public Administration. 5 hours.

This course is designed to provide individual and group study of the human organization as an information system and is aimed at the application of current information theories, methods, and practices to the study of governmental organizational behavior.

848. Seminar in Program Evaluation. 5 hours.

Prerequisite: POL 701 or permission of department.

Systematic survey of the theoretical perspectives associated with program evaluation; design and measurement procedures; types of evaluative research; and the management of political and ethical problems associated with performing and utilizing evaluation research.

855. Human Services Administration in Government. 5 hours.

Prerequisite: POL 641 or permission of department.

This course provides a comparative overview of some of the special problems and processes involved in administering government human service programs in health, welfare, man-power and related areas.

856. Global Security Policy. 5 hours.

Prerequisite: POL 651.

Study of political efforts to deal with threats to world order arising from the economy, the environment, international terrorism, nuclear proliferation and war.

857. Global Welfare Policy. 5 hours.

Prerequisite: POL 651.

This course examines the availability and distribution of resources within and among contemporary nation-states. Looking at such issues as technology transfers, trade and aid across East-West and North-South dimensions, the course takes into account both national and global forces.

858. Human Rights Policy. 5 hours.

Prerequisite: POL 651.

An empirical as well as normative analysis of the human rights issue as it affects the process of policy formulation and implementation. Both domestic and international policy areas are included.

859. Politics of East-West Economic Policy. 5 hours.

Prerequisite: POL 630A or 620 or permission of department.

This course examines the national and global politics surrounding economic relations between the market economics of the industrialized West and the centrally planned economics of the Communist East.

868. Seminar in Urban Politics. 5 hours.

An advanced study of politics in urban communities. Topics provide government organization, community power structures, urban political organizations, and selected problems in urban government.

875. Systems of Political Philosophy. 5-10 hours.

Prerequisite: Permission of department.

A detailed examination of the writings of a

leading political philosopher, aimed at seeing how the elements of his thought form a comprehensive and unified view of political life. The men to be studied from year to year will include Plato, Aristotle, St. Thomas Aquinas, Machiavelli, Hobbes, Locke, Rousseau, Hegel, Marx, and Nietzsche. Classic works in American thought such as *The Federalist* will also be considered.

876. Problems in Political Philosophy. 5-10 hours.

A study of selected problems in political philosophy. The problems include the nature of justice; the functions of government; the grounds of legitimate authority; the scope of individual rights; the foundations of democratic government; political obligation; civil disobedience; and revolution, the meaning of responsibility; views of human nature and their political relevance.

877. Recent Political Thought. 5 hours.

A study of important and influential political theories of recent times, including ideologies and scientific theories as well as contributions to political philosophy. The aim will be to understand both the approaches to political theory that have emerged in the contemporary period and the alternative interpretations that have emerged in the contemporary period and the alternative interpretations that have been given of contemporary man and society.

878. Epistemological Foundations of Political Inquiry. 5 hours.

Prerequisite: POL 701 or permission of department.

A study of the advanced level of alternative methods of political inquiry and the assumptions about human knowledge and scientific methodology that underlie them. Attention will be focused on political philosophy as a method of inquiry, not on the substantive problems with which it deals, and on its relationship to other methods now prevalent in the discipline of political science.

879. Readings and Research in Political Philosophy. 5-10 hours.

Prerequisite: Permission of department.
Independent study of selected problems or works in political philosophy.

883, 884. Problems of Constitutional Government in the United States. 5 hours each.

A course designed to provide individual or small group instruction for graduate students who are interested in an intensive study of special problems of American government.

885, 886. Readings and Research in Problems of State Government. 5 hours each.

This course is designed to provide an intensive study of special problems of state government.

887. Public Policy Seminar. 5-10 hours.

Research seminar on the major theoretical approaches to decision-making in substantive public policy. The choice of the substantive issues to be studied will be tailored to student's needs. For example, each student in the seminar could study the policy-making process in a different issue area each quarter. Examples of substantive areas which would be covered are military policy and social welfare policy.

888A. Seminar in Law Enforcement Administration. 5 hours.

A research seminar in the methods of policy analysis, data collection, and change initiation related to legal administration.

920. Special Problems in Political Science. 5-10 hours.

A research/problems course designed for students for advanced graduate standing. Students must have completed a minimum of four courses in the general area in which he/she selects his/her major topic.

930. Thesis. 1-15 hours.

GLOBAL POLICY STUDIES (GPS)

600. Global Policy Analysis. 5 hours.

Prerequisite: Ten hours of graduate course work.

This course offers interdisciplinary approaches to global policy. It covers the planning, implementation, and evaluation of policies designed to deal with global problems, especially development. The course is required for all candidates for the graduate Certificate in Global Policy Studies.

POULTRY SCIENCE (PS)

M.G. McCartney
(Livestock-Poultry Building, South Campus)

The Department of Poultry Science offers excellent opportunities for graduate study for qualified students with degrees in biology, chemistry, economics and poultry science. Graduate programs leading to the MS and PhD degrees are offered in the fields of poultry products, nutrition, mycotoxicology, genetics, physiology, management and parasitology. Facilities for graduate training include laboratories with the latest equipment for studies in lipid and mineral metabolism, environmental and reproductive physiology, physiological and population genetics and in avian diseases and parasites.

Equipment is available for electrophoretic and chromatographic separation, fractionation procedures, and use of radioactive isotopes, including a whole body counter. Specialized equipment includes liquid scintillation detectors, infrared, ultraviolet and dual spectrometers, ultracentrifuge, amino acid analyzer, gas-liquid chromatograph, and numerous other modern instruments.

Experimental poultry facilities are also available for studies, where large numbers of birds are required for research in the various areas of specialization in the graduate program, including a controlled temperature house for work in environmental physiology.

Superior students are encouraged to apply for graduate assistantships and fellowships which are available through the department.

Doctoral language requirement: one foreign language.

The 800 numbered courses in nutrition are listed in the offerings of animal nutrition.

601. Avian Physiology. 5 hours. Three hours lectures and two lab periods.
Prerequisite: CHM 240.

A study of the physiology of circulation, respiration, digestion, metabolism, and the nervous system of the fowl with emphasis on the glands of internal secretion. (Spring quarter.)

633. Basic Mycotoxicology. 5 hours.
Prerequisite: BIO 102 and CHM 261 or equivalent.

A study of mycotoxins as they relate to agriculture. Various mycotoxins apt to occur in feed-stuffs will be discussed. Major areas of emphasis are fungal producers, chemical and physical properties of the toxins, prevalence and distribution in nature, biological effects and mode(s) of action, and means of control. (Spring quarter.)

637. (AN) Monogastric Nutrition. 5 hours.
See AN 637.

682. Avian Embryology. 5 hours. Three lectures and two lab periods.
Prerequisite: BIO 101, 102, or permission of department.

A basic course in embryology, tracing development from fertilization through the various stages of differentiation. (Winter quarter.)

806. Physiology of Avian Reproduction. 5 hours.
Prerequisite: CHM 240 and PS 380.

A consideration of the fundamental biological aspects of avian reproduction. Knowledge of the fundamentals and mastery of techniques will be utilized in the working of problems in reproduction in the domestic fowl. (Summer quarter.)

808. Parasitic Diseases of Poultry. 5 hours. Three lectures and two 2-hour lab periods.
Prerequisite: ZOO 372 or equivalent.
An intensive study of life histories and ecological factors useful in control of poultry parasites. (Winter quarter.)

810. Poultry Science Seminar. 1 hour.
Prerequisite: Three 5-hour courses in poultry or equivalent.

Reading, reports and discussions of problems related to the field of poultry. One hour credit per quarter. May be repeated for a total of five quarter hours credit. Required of all graduate students in poultry. (Winter quarter.)

812. (ESC) Science Writing and Literature Retrieval. 5 hours.

Prerequisite: Student must be in program related to life sciences.

Principles of scientific writing and literature retrieval techniques in the life sciences. Emphasis will be placed on familiarization with library resources and their use through manual and automated retrieval systems and on practical aspects of oral and written communications of scientific information. (Summer quarter.)

830. (ZOO/PAR) Seminar in Parasitology. 1 hour. (Max. 6 hours.)
See ZOO 830.

851, 852, 853. Problems in Poultry Science. 5 hours each.

These courses allow graduate students to work intensively on selected problems in the specialized areas of poultry nutrition, genetics, physiology, poultry products technology, pathology, parasitology management. This listing will permit a maximum of 15 hours credit, with not more than 10 hours in any one discipline.

930. Thesis. 1-15 hours.

PSYCHOLOGY (PSY)

William B. Pavlik

(Psychology Building, North Campus)

Graduate work leading to the PhD degree is offered in biopsychology, clinical psychology, experimental psychology, applied psychology, and social psychology. A few non-traditional students may be admitted each year to a master's degree program tailored to their individual backgrounds and needs. In the field of applied psychology, a small number of terminal master's degree candidates may be admitted. The large majority of students are admitted directly into one of the five doctoral programs and they are required to obtain the master's degree on the way to the doctoral degree. Foreign language proficiency is not required by the department, but individual programs and advisory committees may set such a requirement.

The *biopsychology* program permits specialization in physiological psychology, comparative psychology, sensory communication, primatology, or some combination of the specialities. Primatology studies and research are carried out in cooperation with the Yerkes Regional Primate Research Center in Atlanta and at its field station in Lawrenceville. The *clinical* program, approved by the American Psychological Association, seeks to prepare the student for a variety of professional roles by providing a solid foundation in technique, theory and research in clinical psychology. In the *experimental* program, specialization is offered in learning and performance, perception, and complex processes. The student may elect a developmental approach to these problem areas. The *applied psychology* program permits the student to concentrate in psychometrics, organizational psychology, man-power utilization, educational research, and related areas. In the *social* program, substantive training is provided in the areas of cognitive and attitudinal theories, group structure and process, and personality and social development, along with methodological training in group observation, attitude measurement, and survey research.

Facilities for graduate training in psychology include relatively complete psychophysiology

ological, psychoacoustical, psychomotor, and other experimental psychology laboratories, the Psychological Clinic providing diagnostic and therapeutic services, the University Testing and Evaluation Center, extensive human and animal research facilities, an electroencephalography laboratory for computer analysis of evoked potential responses, the Follow-Through program with its focus on developmental psychology, the University Computer Center, and a Research and Training Center for Mental Retardation. Other research opportunities are offered in the Institute for Behavioral Research and at the Yerkes Regional Primate Research Center.

Although most students begin their graduate work in the fall quarter, initial admission in any other quarter is permitted by all programs except Clinical Psychology. Prospective students who desire financial aid should submit complete applications to the graduate coordinator by February 15th.

604. History of Psychology. 5 hours.

A study of the history of psychology and its antecedents, of systematic developments and the types of research these systems have produced.

605. Systems of Psychology. 5 hours.

Prerequisite: PSY 404/604.

An investigation of the theoretical systems in psychology since 1880, with emphasis upon the types of research which these systems have produced.

606. Psychology of Aging. 5 hours.

Prerequisite: PSY 101, 374; SOC 365.

A survey of age-related changes in behavior with an emphasis on the life span aspects of psychology and gerontology. Discussions will cover empirical and theoretical research on learning, personality, attitudes, sensation, perception, aptitudes, ability, and potential with particular reference to behavioral changes in the latter portion of the life span. Research related to adjustment problems among the aged will be reviewed.

607. Humanistic Psychology. 5 hours.

Prerequisite: PSY 101 and two upper division psychology courses or equivalent.

As the "third force" in psychology, humanistic psychology includes the study of self-theory, being-psychology, and contributions of the humanities to psychology.

609. Psychology of Religion. 5 hours.

Prerequisite: PSY 101 and upper division standing plus 10 hours graduate credit in psychology, philosophy or sociology and permission of department.

Psychological aspects of religion. Perceptual, intellectual, linguistic, emotional, and intrapersonal dimensions of the religious experience will be studied.

612. Behavior Therapy. 5 hours.

Survey of behavior therapy techniques for use with adults. Emphasis on relaxation training, systematic desensitization, modeling, contingency management, aversive control, cognitive restructuring, and similar methods.

614. Introduction to Industrial-Organizational Psychology. 5 hours.

A survey of major topics in industrial-organizational psychology, with emphasis on organizational psychology and personnel psychology, as applied to the fields of business, industry and government.

615. Psychometrics. 5 hours.

This course focuses on the theoretical and statistical principles that underlie psychological measurement. Emphasis is placed on understanding how these principles are employed in the development and use of psychological tests. Applications of existing tests are discussed and critiqued. Professional standards and legal guidelines are presented.

616. Individual, Psychological Testing: Wechsler-Bellevue. 5 hours.

Training in the administration, scoring, and interpretation of the Wechsler scales. A minimum competency in the use of these scales for both children and adults is required but the major part of the practical work may be in the age range selected by the student.

618. Individual Psychological Testing: Terman-Merrill Scales. 5 hours.

A course designed to give the student training in the administration, scoring, and interpretation of the Minnesota Multiphasic Personality Inventory.

622. Experimental Design in Psychology. 5 hours.

An advanced treatment of the design and analysis of psychological research, with emphasis on the logical foundations of experimental design.

640. Research Methods in Social Psychology. 5 hours.

This course is designed to provide students with an in-depth review of the methods used in contemporary empirical research by social psychologists. Field and experimental approaches will be examined in terms of their relative strengths, weaknesses, and costs for various research questions. Topics will vary from quarter to quarter.

650 (SPA/LIN) Language Development. 5 hours.

See SPA 650.

651. Theories of Personality. 5 hours.

The primary emphasis of this course is on the survey of major personality theorists. Additionally some attention is devoted to current research in personality and to methodological issues in the field.

652. Learning and Motivation. 5 hours.

A survey of the methods, data, and theories developed from experimental research on the processes of learning, motivation, incentive, inhibition, and related variables. Equal attention is devoted to human and infrahuman behavior.

653. Individual Differences. 5 hours.

An examination of the nature and interrelationship of psychological traits, including maximum performance (intelligence, achievement, etc.) and typical behavior (interests, personality, etc.) traits. Also considered are the extent of racial, sex, age, and other group differences as well as the causal factors (genetics, environmental, etc.) in individual differences.

654. Psychology of Values. 5 hours.

A significant contemporary problem is the search for meaningful values in this age of crisis. Value conflicts are increasingly evident on personal, group, national and international levels. This course will examine the contributions of psychology to the resolutions of these problems, in terms of value measurement and theoretical implications of research findings. Both behavioral and humanistic perspectives will be studied. The course is open to non-psychology majors.

656. (BIO) Sensory Systems. 5 hours.

Prerequisite: PSY 322 or BIO 380 or equivalent. This course covers the sensory systems: vision, audition, touch and pain, taste, smell, the vestibular sense (balance) and lesser known animal senses such as sensitivity to magnetic and electrical fields. Five aspects of these systems are discussed: the physical stimulus, anatomy, neurophysiology, behavioral physiology/psychophysics, and clinical problems.

657. Psychology of Perception. 5 hours.

The phenomena of perception are investigated. Empirical and experimental demonstrations are conducted, followed by a study of the various theories of perception.

658. Statistics in Psychological Research. 5 hours.

A study of the basic concepts and techniques

in descriptive and sampling statistics. Applications of statistics in psychological research.

660. Dyadic Interaction Analysis. 5 hours.

Theories of personality, interpersonal behavior, and social learning are examined from the standpoint of their applicability for understanding the process of psychotherapy.

661. Advanced Experimental Psychology. 5 hours.

Prerequisite: PSY 458/658.

Emphasis is placed upon experimental techniques and methods of experimental work. Especially designed for the student who desires to learn scientific method in psychology.

663. Cognitive Psychology. 5 hours.

Prerequisite: PSY 455/655 or PSY 652 or their equivalents.

An examination of the history of cognitive psychology and the basic cognitive processes involved in attention, memory, knowledge representation, information processing and problem solving.

664. Advanced Social Psychology. 5 hours.

This survey course includes ethics in social research; social factors in perception; attitude formation and change; cognitive theories; group structure and process; ideology and personality; and social motivation.

665. Methods and Practices in Clinical Psychology. 5 hours.

A survey of assessment and behavior-personality change procedures currently used in clinical psychology. The course will also focus on theoretical issues important to these applied procedures.

666. (SPC) Psychology of Speech Communication. 5 hours.

See SPC 666.

675. (ANT) Principles of Primate Phylogeny. 5 hours.

See ANT 675.

676. (ANT) Comparative Physical and Psychological Development of the Primates. 5 hours.

See ANT 676.

677. (ANT) Organizations of Primate Social Groups. 5 hours.

See ANT 677.

680. Physiological Psychology. 5 hours.

Prerequisite: Ten hours of biology.

The relationship between the internal environment and such behaviors as food intake control, mating behavior, neural action, emotion, etc. are studied.

681. Comparative Psychology. 5 hours.

Prerequisite: Ten hours of biology.

An analysis of the structure and behavior of the amoeba and the animal series to man. The integration of structure, physiological processes and behavior are emphasized throughout the course, resulting in a more thorough understanding of the adjustment process.

691. Foundations of Behavior. 5 hours.

Prerequisite: Permission of department.

An intensive survey of the literature in the fundamental aspects of physiological and comparative psychology.

692. Sensory Psychology. 5 hours.

An intensive survey of the literature in the fundamental aspects of sensation and perception.

750. Individual Psychological Assessment: Objective Measures. 5 hours.

Prerequisite: PSY 814 or permission of department.

Training in administration, scoring, interpretation and reporting of various objective tests, including the WAIS, WISC-R, PIAT, WRAT, WMS, and others. Minimum competency in the use of these scales for both children and adults is required by end of course.

753. Personality Assessment. 5 hours.

Prerequisite: PSY 814 or permission of department.

Clinical application of selected assessment tools, with emphasis on MMPI, TAT and Rorschach including theoretical assumptions and interpretation of data.

754. Psychology of Disadvantaged and Minority Groups. 5 hours.

Prerequisite: Permission of department.

Psychological aspects of minority and disadvantaged groups in the United States and the impact of the discipline of psychology on these groups.

755. Treatment of Sexual Dysfunction. 5 hours.

Prerequisite: PSY 814.

Biological and psychological aspects of human sexual dysfunctions, with a discussion of interviewing, psychometric, behavioral, and psycho-physiological approaches to assessment and common treatment methods.

758. Humanistic Psychotherapy. 5 hours.

Prerequisite: PSY 814 or equivalent.

Discussion of the clinical application of humanistic principles in psychotherapy. Major emphasis is on the theoretical assumptions derived from selected "Third Force" clinicians.

759. Psychodynamic Psychotherapy. 5 hours.

Prerequisite: PSY 814 or equivalent.

Psychodynamic principles will be briefly presented with emphasis on psychoanalytic ego psychology, principles and techniques of psychotherapy will be stressed.

800ABCDE. Advanced Topics in Psychology. 5 hours each.

Prerequisite: Permission of department.

The purpose of this seminar is to examine current topics and new developments in the field of psychology.

804. Animal Learning. 5 hours.

Prerequisite: Permission of department.

Techniques and problems in the use of infra-human subjects in the study of the learning process. Classical and instrumental conditioning, discrimination learning, and related methods are discussed and demonstrated.

805. Theories of Learning. 5 hours.

An analysis of the major theories of learning current among research psychologists.

806A. Vision. 5 hours.

Prerequisite: PSY 692 or equivalent or permission of department.

A general examination of the science of vision that encompasses psychophysical and physiological visual processes with an emphasis on human vision.

806B. Vision Seminar. 5 hours.

Prerequisite: PSY 692 or permission of department.

An advanced examination of specific topics in areas representative of contemporary research and theory in visual science.

807. Audition. 5 hours.

Prerequisite: PSY 456/656 or equivalent.

Theories of hearing and their experimental bases are examined in detail, along with demonstrations of experimental techniques in the area.

808. Senses Other than Audition and Vision. 5 hours.

Prerequisite: PSY 456/656 or equivalent.

Animal orientation, animal communication, and the evolution of sensory-perceptual systems are studied.

809. Cutaneous, Orienting, and Chemical Sensitivity. 5 hours.

A study of the cutaneous, orienting, and chemical senses.

810. Seminar in Humanistic Psychology. 5 hours.

Original readings in "third force" psychology

by representatives such as Fromm, Maslow, Rogers, May, and Frankl.

812. Group Personality Assessment. 5 hours.

Prerequisite: Permission of department.

Research on the development of comprehensive and multi-level personality test batteries for a variety of group assessment and selection situations. Implications for personnel psychology and clinical psychology practices will be discussed and illustrated.

814. Advanced Psychopathology: Adults. 5 hours.

Prerequisite: PSY 423 or equivalent and at least 20 hours of undergraduate or graduate psychology and permission of department.

Surveys, historical trends and contemporary theories of psychopathology; reviews methods, issues, validity and utility of classificatory systems; evaluates the intrinsic-attribute properties of various behavior disorders as well as related assessment and treatment procedures.

818. Community Psychology and Social Welfare Research. 5 hours.

A review of research frontiers and new approaches in community psychology, rehabilitation, and social welfare services. Includes program development and planning, and program evaluation in a variety of social problem areas.

820A. Classical Conditioning. 5 hours.

Prerequisite: One year of graduate work in psychology.

Analysis of Pavlovian theories and procedures; the reinterpretation of the conditioned reflex phenomena by Konorski in research and treatment of the abnormal; salivary and motor conditioning of animals.

820B. Operant Conditioning. 5 hours.

Theoretical and practical approaches to the assessment of free-ongoing behavior. Laboratory exercises in the circuitry and logic of operant conditioning apparatus and design are included.

822A. Verbal Learning and Behavior. 5 hours.

Verbal learning will be examined in conjunction with the prominent general theories of learning. Effects of several characteristics of verbal materials on verbal learning and verbal behavior will be discussed with attention being given to commonly used paradigms of verbal learning.

822B. Human Memory. 5 hours.

A critical examination of the major phenomena, experimental procedures, and theoretical models of human memory.

823A. Classical Perception. 5 hours.

Prerequisite: Graduate standing in psychology.

Discussion of classical problem areas of perception (e.g. contour, movement, illusions) with emphasis on the perceptual process and its relation to other psychological functions.

823B. Seminar in Contemporary Perception. 5 hours.

Prerequisite: PSY 692, 823A, or equivalent.

An examination of contemporary research concerned with detection, recognition, and choice processes.

823C. Organismic Variables in Perception. 5 hours.

Prerequisite: PSY 823A, or equivalent.

Discussion of such variables as body state, set, and motivation in the perceptual process, with emphasis on the organismic nature of perception.

825. Cognitive Theories and Models. 5 hours.

Prerequisite: PSY 663.

An examination of the cognitive theories and models proposed for human behavior in memory, reasoning, language, mathematics, judgment, imagery, problem solving, and thinking.

830. Advanced Physiological Psychology. 5 hours.

Prerequisite: PSY 691 or equivalent.

Analysis in depth of basic topics in physiological psychology. Emphasis is placed upon functional neuroanatomy of mammals to provide understanding of systems for neural control of perception, orientation, motivation, learning, and complex processes.

831. Advanced Comparative Psychology. 5 hours.

Prerequisite: PSY 481/681, 691, or equivalent.

Analysis in depth of basic topics in comparative psychology. Includes: history; relation to other disciplines; behavior genetics; ontogenetic principles and processes; problems in the comparative study of complex processes.

832. Motivation: Biological. 5 hours.

Prerequisite: PSY 691.

The behavioral and physiological bases of the major motivational states, including hunger and thirst, are examined. The motivational aspects of intracranial stimulation, behavioral periodicities, and other current topics are considered.

833. Laboratory Apprenticeship in Physiological and Comparative Psychology. 5 hours.

Prerequisite: PSY 691.

A laboratory-tutorial course in the approaches and research methods of physiological and comparative psychology. Maximum credit will be limited to 25 hours, taken under various instructors.

836. Cognitive Processes in Animals. 5 hours.
Prerequisite: PSY 481/681 or 691 or 831.

Traditional and contemporary, empirical and theoretical research which may be subsumed under "cognitive processes" and which has involved nonhuman animals will be examined. Among the topics will be Piagetian concepts, oddity and sameness-difference judgments, color, form, size, number, and "natural category" judgments, and other class and relational conceptual judgments.

837. (SOC) Theory IIE: Theories of Social Psychology. 5 hours.
See SOC 837.

838. Pain. 5 hours.
Prerequisite: PSY 691 or 692 or equivalent.
Psychological aspects of the pain experience, as well as neuroanatomy and physiology related to pain, are covered. Techniques of pain reduction in the laboratory and clinic are emphasized in discussion.

839ADE. Seminar in Physiological Psychology. 5 hours each. (Max. 20 hours.)
Prerequisite: PSY 691.

Designed to explore in depth particular problem areas within physiological psychology. Emphasis is placed upon evaluation of current research and theory and students' development of original research ideas.

839BFGJ. Seminar in Comparative Psychology. 5 hours each. (Max. 20 hours.)
Prerequisite: PSY 691.

Designed to explore in depth particular problem areas within comparative psychology. Emphasis is placed upon the evaluation of current research and theory in the development of research ideas by the student.

841. Physiological Bases of Behavior. 5 hours.
Prerequisite: Permission of department.
An examination of the physiological bases of human behavior including neurophysiology, neuropathology, psychopharmacology, endocrinology, and psychosomatic disorders.

845. (MKT) Behavioral Theory and Marketing. 5 hours.
See MKT 845.

850. Clinical Staffing Procedures. 5 hours.
Prerequisite: Permission of department.
Practicum in clinical psychology. Supervised experience in assessment and treatment of

clinical problems using a wide variety of applicable techniques. Professional roles and ethical concepts of the clinical psychologist are integrated with clinical procedures.

851. Child Behavior Therapy. 5 hours.
Prerequisite: PSY 814 or equivalent.
Behavior change strategies for child behavior problems occurring in the home, school, or institution. Conduct problems, hyperactivity, learning problems, social withdrawal, mental retardation, and autism are among the disorders examined.

852. Behavioral Medicine/Health Psychology. 5 hours.
Prerequisite: PSY 691, 665 and permission of department.

The definition, scope and research efforts in the field of behavioral medicine-health psychology will be discussed. The behavioral concomitants of select medical and psychophysiological disorders (e.g., cardiovascular, respiratory and pain related problems) as well as psychologically based interventions will be covered.

853. Psychiatric Methods. 3 hours.
Prerequisite: Permission of department.
Clinical psychiatry including a diagnostic approach and physical and psychotherapeutic treatment methods.

855. Neuropsychological Assessment. 5 hours.
Prerequisite: PSY 691, 830, 841.
Theories of brain function in the human will be discussed. Methods of detecting abnormal functioning and the localization of such abnormal functioning by behavioral methods will be presented. Possible etiologies of such lesions will be covered.

861. Psychophysical Methods and Psychological Scaling. 5 hours.
Prerequisite: Permission of department.
An examination of methods and appropriate theories to the investigation and scaling of sensory and nonsensory stimulus events. Single and multidimensional scales are considered.

863. Nature of Psychological Inquiry. 5 hours.
Prerequisite: PSY 458/658.
A detailed consideration of the theoretical and methodological foundations of psychological research. Problems encountered in the planning of experiments and other types of research.

864. Teaching of Psychology in Colleges and Universities. 5 hours.
Prerequisite: At least third year graduate student.

Instructional and professional problems of college psychology teaching are examined via class discussions, student reports, and visiting speakers. Topics include objectives, organization, and finances of higher education, curriculum and course design, teaching techniques, grading, student and faculty relations, academic freedom, tenure, and employment.

869. (ART) A Psychological Approach to Eroticism in Art. 5 hours.

Prerequisite: 20 hours of graduate credit in art or psychology and permission of department. The course traces the history of erotic expression in Art from prehistoric to modern times and then examines modern scientific studies of arousal produced by erotica as well as the consequences of exposure to erotic artistic materials. It concludes with an examination of the modern dilemma concerning freedom of expression vs. the preservation of established morality.

870. Methods for Observing Social Interaction. 5 hours.

Prerequisite: Permission of department. A course designed to provide a first-hand acquaintance, at an advanced level, with representative systematic observational approaches. The advantages and limitations of observational techniques are also considered.

871. Theories of Attitude Structure, Formation, and Change. 5 hours.

Prerequisite: PSY 664. A comparative examination of theoretical approaches to the organization and formation of beliefs and attitudes to cognitive consistency, and to the determinants of attitude stability and change.

872. Group Structure and Process. 5 hours.

Prerequisite: PSY 664. An examination, at an advanced level, of situational and individual determinants of social structure and interaction in face-to-face groups. Various theories of exchange, equity, power, and leadership are considered.

879. Advanced Seminar in Social Psychology. 5 hours. (Max. 15 hours.)

Prerequisite: PSY 664. Illustrative topics are social motivation; conformity; social power; interpersonal perception; stimulation and mathematical models of social behavior; and vicarious learning.

880. Development Psychology. 5 hours.

Critical survey of evidence concerning physical, social, and psychological development of primates. Special emphasis is placed on comparative analysis for understanding human development.

881. (LIN) Language and Reality. 5 hours.

Prerequisite: Interview with instructor. This course focuses on the discussion of three questions:

How does language communicate?

What is communicated?

What is the relation between "meaning" and "reality"?

The history of epistemology is examined from a psycholinguistic point of view, the child's cognitive development and acquisition of language are discussed, and recent cybernetical approaches to the problems of communication and the concept of "reality" are presented.

882. (LIN) Psycholinguistics. 5 hours.

Prerequisite: Interview with instructor. The course surveys recent theoretical and experimental work in psycholinguistics and psychosemantics. Cognitive and linguistic development are discussed and the conceptual presuppositions of ordinary language usage are examined. The course comprises a working seminar during which a specific section of English semantics is subjected to conceptual analysis.

884. Personality and Social Development. 5 hours.

Survey of literature relevant to early childhood determinants and developmental processes to personality and social behavior. Current research, theories and methodological issues are emphasized.

885. Perceptual Development. 5 hours.

Prerequisite: PSY 880 or equivalent. Discussion of ontogenetic changes in perception and their importance for other cognitive processes with emphasis on the building of a useful developmental theory.

886. (LIN) Cognitive Development. 5 hours.

Prerequisite: PSY 880 or equivalent. Analysis and discussion of current research on problems, issues, and theories relevant to the development of complex cognitive processes.

887. Theories of Psychological Development. 5 hours.

Prerequisite: PSY 880 or equivalent. Evaluation of the logical and empirical adequacies of modern theories of psychological development in relation to selected issues relevant to theory construction in the behavior sciences.

888. Human Sexual Behavior. 5 hours.

Prerequisite: Permission of department. An examination of the nature and variety of human sexual behavior in many settings.

889ABC. (LIN) Seminar in Developmental Processes. 5 hours each.

Prerequisite: Ten hours of graduate work in psychology.

Study of current topics in developmental psychology. Emphasis on independent study and research.

892. Behavior Problems in Children. 5 hours.

893. Advanced Psychological Measurement. 5 hours.

Prerequisite: PSY 415/615.

Aptitude and ability test construction; reliability; criterion development; validity; and item analysis.

894. Cognitive Measurement. 5 hours.

Prerequisite: PSY 893.

A survey of classical and contemporary readings related to the applications of measurement to industry, education, and related areas of the behavioral sciences. Among the problems considered are scales, reliability, validity, change scores, differential predictions, criterion-referenced tests, governmental regulations, etc.

895. Non-Cognitive Measurement. 5 hours.

Prerequisite: PSY 893.

Approaches to interest and personality measurement; artifacts and methodology, dimensions, organization and utility; nominal scale analysis.

896. Training and Development. 5 hours.

Prerequisite: PSY 414/614 or permission of department.

A review of the principles systems, and techniques applicable to industrial and organizational training and management development.

897. Organizational Psychology. 5 hours.

Prerequisite: PSY 414/614 or permission of department.

An examination and critical review of theories and research in selected areas of organizational behavior. Emphasis is on intrapersonal behavior, such as, motivation, job stress, and job satisfaction.

898. (MAN) Seminar in Industrial-Organizational Psychology. 2-15 hours.

Prerequisite: Permission of department.

Consideration of significant and current topics in industrial-organizational psychology as determined by the interests and research activities of the staff.

899. Seminar in Psychometrics. 2-15 hours.

Prerequisite: PSY 894 or 895.

Consideration of significant and current topics

are defined by the interests and research activities of the staff.

900. Special Problems. 1-30 hours.

Prerequisite: Permission of department.

Extensive readings or empirical research in selected areas or planning and pilot studies preparatory to a thesis.

904. (MAN) Seminar in Management Assessment and Development. 5 hours.

See MAN 904.

920. Clinical Internship in Psychology. 5 hours.

Prerequisite: Permission of department.

Students will engage in the professional practice of clinical psychology under constant and close supervision. This professional work will include treatment of patients, group and individual psychotherapy, teaching and research.

930. Thesis. 1-15 hours.

986. (MAN) Seminar in Compensation. 5 hours.

See MAN 986.

988. (MAN) Seminar in Staffing. 5 hours.

See MAN 988.

RELIGION (REL)

George Howard
(Peabody Hall, North Campus)

The department offers a comprehensive program of studies in the field of Religion leading to the MA degree. Areas of concentration are in World Religions, Semitic Languages, Old Testament, Intertestamental Studies, New Testament, and Early Christian Literature, Historical Theology, and Philosophical and Systematic Theology. Various methodologies are employed in these areas. Admission to the MA program presupposes a thorough background in Religious Studies. The graduate program is designed to give the student a broad and thorough training in the field of Religion with a specialization in some area of concentration.

For the MA degree, reading knowledge of one foreign language is required.

Permission of department is a prerequisite for these courses unless otherwise stated.

600. The History of Religions. 5 hours.

A survey of the nature of early primitive religions and the main outlines of the chief living religions of the world. The method will be both historical and analytical.

601. Religion in Asian Cultures. 5 hours.

The interrelation between religion and culture in contemporary and classical Asia. The course will focus on religion's role historically as a major force in shaping the cultures of South and Southeast Asia, China, and Japan, and on significant contemporary trends reflecting particularly the effects of secularism, war, rising nationalism, Western science, and communism.

604. The Buddhist Tradition. 5 hours.

The development of Buddhism from its origins in the life and teachings of the Buddha through the period of philosophical ferment in India, and its thought and institutions in the East and the West up to the present.

608. (PHY) Philosophy of Religion. 5 hours.

See PHY 608.

609. Indian Philosophy and Religion. 5 hours.

Traces the path of India's religious and philosophical thought from the Indus civiliza-

tion to the present. Attention will be given to interpreting the orthodox Hindu systems, as well as Buddhism, and their related religious practices, ethics, castes, and sects.

610. Old Testament Literature. 5 hours.

A study of the nature, content and problems of Old Testament literature, with attention given to historical data, literary forms, and outstanding personalities.

611. New Testament Literature. 5 hours.

A study of the nature, content and problems of New Testament literature, with particular attention given to the political, social and religious background of Judaism out of which Christianity sprang, the life of Jesus, the immediate foreground of an expanding church.

612. The New Testament World. 5 hours.

Prerequisite: At least ten hours of history and/or literature.

A study of the political, social, and religious influence on the New Testament writings. Special attention is given to Intertestamental Judaism and Hellenistic and Roman Religion as backgrounds to New Testament Christianity.

613ABC. Introduction to the Study of Ancient Religious Texts. 5 hours each.

Prerequisite: Ten hours of advanced work in religion or permission of department. In some cases a reading knowledge of the language. A study of the problems related to ancient religious texts. The student will be introduced to the language, manuscript history, and methods of studying ancient religious texts. In some cases, a reading knowledge of the language will be required, in others, English translations will be used.

620. Constructive Theology. 5 hours.

An examination of the aims, methods, and content of theology as related to monotheistic religions of mankind.

621. Contemporary Theology. 5 hours.

An examination of the theories of contemporary theologians concerning such problems as religious language, God, cosmology, human history, revelation, faith, and eschatology. Writings from contemporary theologians of the monotheistic religions will be investigated.

622. Theology and Culture. 5 hours.

An examination of the relation of theology to philosophy, science, technology, and the arts, with special attention to the theological attempts to deal with the impact of science and technology upon culture.

625. Issues in Old Testament Theology. 5 hours.

A study of current issues in Old Testament theology. Special attention will be given to the methodologies of important contributors including Walter Eichrodt and Gerhard von Rad.

630. Personalities of the Old Testament. 5 hours.

A study of the development of Hebrew religion from its early, more primitive stages to the high point attained in the social, ethical, and spiritual teachings of the great writing prophets of Israel.

640. The Teachings of Jesus. 5 hours.

Although primarily a study of what Jesus taught, attention is given to the literary and environmental background of his teaching, the historical life of the teacher, and the contemporary validity of what he taught.

660. Life and Letters of Paul. 5 hours.

An historical-exegetical study of the life and letters, the relation between Acts and the Pauline epistles, early non-Pauline Gentile Christianity, Pauline theology, and its lasting impression on Christianity.

820. Seminar in Comparative Religion: Christianity and Hinduism. 5 hours.

Prerequisite: Ten hours of credit in courses in religion or permission of department.

An examination of Hinduism and Christianity using the methods of modern comparative religion. Texts drawn from both ancient and modern times will be studied.

821. Seminar in Comparative Religion: Christianity and Buddhism. 5 hours.

Prerequisite: Ten hours of credit in courses in religion or permission of department.

An examination of Buddhism and Christianity using the methods of modern comparative religion. Texts drawn from both ancient and modern times will be critically studied.

825ABC. Seminar in Problems and Topics in Biblical Theology. 5 hours each.

An investigation of problems and topics in Biblical Theology with emphasis on extensive reading in primary (biblical) and secondary sources along with individual and/or group research projects. Topics will vary with instructor and interests of students.

841. Seminar in the Theory of God. 5 hours.

A study of the philosophical and religious concepts of God as expressed in the writings of various philosophical and religious perspectives.

850. Seminar in Early Christian Literature and Eastern Religious Traditions. 5 hours.

A study of the Asian religious background to, and its impact upon, the development of Christianity.

860. Seminar in Intertestamental Literature. 5 hours.

A study of Jewish literature of the intertestamental period with an emphasis on the history and theology reflected. The literature includes such writings as those found in the so-called apocrypha, pseudepigrapha, Dead Sea Scrolls, Philo and Josephus.

861. Seminar in the Gospels. 5 hours.

Prerequisite: Ten hours of advanced work in religion plus a reading knowledge of Greek.

A study of the origins of the gospels. Emphasis will be placed upon the synoptic problem, the sources used by the authors, and the meaning of gospel narrative.

863ABC. Seminar in Problems and Topics in New Testament Research. 5 hours each.

Prerequisite: Ten hours of advanced work in religion or permission of department. Some topics will require a reading knowledge of Greek.

A study of major issues in New Testament research such as New Testament and Gnosticism, New Testament and Judaism, New Testament and Hellenism or some more narrowly defined problem connected with a particular New Testament book or person.

864ABC. Seminar in Problems and Topics in Post-Biblical Early Christian Literature. 5 hours.

A systematic study of the major issues in early Christian theology as reflected in the creedal controversies and the writings of the early church fathers from the 2nd through the 4th Centuries A.D.

880ABC. Reading and Research in Special Problems in Religion. 5 hours each.

Directed readings and research in religion in area(s) of a student's special interest.

930. Thesis. 1-15 hours.

Prerequisite: Candidacy for MA degree.

Research toward and writing of Master's thesis in Religion.

ARAMAIC/SYRIAC (ARA)

602. Introduction to Aramaic/Syriac. 5 hours.

Prerequisite: HBW 404/604

A study of the elements of Aramaic/Syriac especially as related to Hebrew, along with simple readings from religious texts.

603. Advanced Reading From Religious Aramaic/Syriac Texts. 5 hours.

Prerequisite: ARA 402/602.

Selected readings from the Bible, the Dead Sea Scrolls and early rabbinic literature with selections from the ancient Peshitta translation of the Bible and early patristic writings in Syriac.

HEBREW (HBW)

603. Intermediate Hebrew I. 5 hours.

Prerequisite: HBW 202.

A review of classical Hebrew grammar with readings of selected texts from the Hebrew Bible.

604. Intermediate Hebrew II. 5 hours.

Prerequisite: HBW 403/603.

Readings of Hebrew texts selected from the Old Testament, Dead Sea Scrolls, or early rabbinic literature.

605. Advanced Hebrew I. 5 hours.

Prerequisite: HBW 404/604.

Advanced readings in Hebrew literature selected from the poetical sections of the Hebrew Bible, the Hebrew documents from Qumran and the Cairo Geniza, and the Hebrew remains of Ben Sira.

606. Advanced Hebrew II. 5 hours.

Prerequisite: HBW 405/605.

Advanced readings beyond those of HBW 405/605 selected from the poetical sections of the Hebrew Bible and from early haggadic and halakic literature.

ROMANCE LANGUAGES

Jean-Pierre J. Piriou

(Moore College, North Campus)

The MA is offered with a major in French, Spanish, or Romance Languages. Forty hours of course work, plus a thesis, and a final oral examination are required for the major. These courses must include at least 15 hours in courses numbered 800, and FR/SP 770F/770S or 870F/870S. A reading examination in one language (exclusive of the major language) must also be completed before the admission to candidacy can be filed. Options in French and Spanish linguistics are offered for the MA in French and Spanish. Degree requirements are the same, but 25 of the 40 hours must be in language or linguistics; the thesis is to be on a linguistic topic, and the oral examination will cover a reading list in linguistics.

The PhD degree is given in Romance Languages with a major in French or Spanish and a minor in a discipline or interdisciplinary field related to the major. A minimum of 23 graduate courses (including those taken at the MA level), preliminary examinations, a dissertation and a final oral defense are required. In addition to the major language, at least one graduate course in another Romance language must be taken. The minor consists of four to six courses (of the 23 required), and with the approval of the student's Advisory Committee, may include isolated graduate courses outside the major or minor fields. A reading knowledge of two foreign languages (exclusive of the major language and English) is required.

Advanced work in Italian may be combined with the study of another Romance language for the MA or PhD degrees.

CATALAN (CAT)

601. Catalan Language and Literature. 5 hours.

Prerequisite: At least four terms of another Romance language or Latin, or by permission of the department.

This course will teach a reading knowledge and basic conversational knowledge of Catalan, the essential grammatical structures,

the main lines of literary history, and the importance of Catalan nationalism in the Spanish context.

FRENCH (FR)

610. French Culture and Civilization. 5 hours.
A study of the history of French culture and of its contribution to world civilization from the Middle Ages to the present. Social, political, cultural and technical developments are illustrated in lectures, slideshows and discussions. Given in French.

611. France Since 1968. 5 hours.
The making of contemporary French society from 1968 to the present, as derived from analysis of the interrelationship of cultural, social, economic and political factors. Given in French.

625. Literature of the Middle Ages. 5 hours.
Prerequisite: FR 570F/770F and FR 420 or permission of department.
A survey of Old French literature to 1300 and study of its history and of important individual works with emphasis upon their literary values. Given in French.

636. Middle French Literature. 5 hours.
Prerequisite: FR 420 or permission of department.
A historical survey of French literature of the 14th and 15th Centuries. Special emphasis will be given to the life and works of Guillaume de Machaut, Jean Froissart, Eustache Deschamps, Charles d'Orléans, François Villon, and Philippe de Commines. Given in English.

638. Poetry and Drama of the 16th Century. 5 hours.
Prerequisite: FR 420 or permission of department.
A historical survey of the French poetry and drama of the Renaissance, with special emphasis on the life and works of Pierre de Ronsard and Joachim du Bellay. Lectures, cultural readings, reports. Given in English.

639. Prose of the 16th Century. 5 hours.
Prerequisite: FR 420 or permission of department.
A historical survey of French prose literature of the Renaissance with special emphasis upon the life and works of François Rabelais and Michel de Montaigne. Lectures, collateral readings, reports. Given in English.

645. Prose and Poetry of the 17th Century. 5 hours.
Prose and poetic styles as studied in selected

masterpieces from Malherbe to La Bruyère. Given in French.

646. Drama of the 17th Century. 5 hours.
Concentrates almost exclusively on Corneille, Racine and Molière. Given in French.

655. The Enlightenment. 5 hours.
A study of precursors and principal figures of the French Enlightenment. Given in French.

656. Drama and Poetry of the 18th Century. 5 hours.
French 18th Century literature as represented principally by drama. Given in French.

657. Prose Fiction of the 18th Century. 5 hours.
A study of representative works of major fiction writers of the 18th Century. Given in French.

665. Prose Fiction of the 19th Century. 5 hours.
The development of the novel and its relationship to the various literary movements of the 19th Century. Given in French.

666. Drama of the 19th Century. 5 hours.
A study of the development of French drama in the 19th Century from Romanticism to Post-Symbolism. Given in French.

667. Poetry of the 19th Century. 5 hours.
Prerequisite: FR 450 or 465 or equivalent or permission of department.
A concentrated survey of French Romantic and Post-Romantic poetry, from Lamartine to Mallarmé. Given in French.

675. Prose Fiction of the 20th Century. 5 hours.
A study of representative works of major 20th Century French novelists. Given in French.

676. Drama of the 20th Century. 5 hours.
A study of representative works of major 20th Century French playwrights. Given in French.

677. Poetry of the 20th Century. 5 hours.
Analysis of major 20th Century French poets. Given in French.

703. Oral French for Teachers. 5 hours.
Development of advanced level listening and speaking skills emphasizing idiomatic aspects of French grammar and vocabulary expansion.

707F. Applied French Linguistics. 5 hours.
Prerequisite: FR 306 or permission of department.
The applications of the science of linguistics to the methodology of teaching French. Given in French.

756. Advanced French Syntax and Composition. 5 hours.

Comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of French. Acquired knowledge will be applied in weekly compositions. Given in French.

757. French Phonetics. 5 hours.

A careful analysis of each of the sounds in French language followed by intensive drill in the accurate pronunciation of these sounds in connected discourse. Practice in phonetic transcription; use of tapes. Given in French.

759. Comparative Stylistics. 5 hours.

Prerequisite: FR 306 or permission of department.

Emphasis on the expression of concepts through translation and free composition practice in the acquisition of facility in the target language. Given in French.

770F. (LIN) History of the French Language. 5 hours.

Prerequisite: FR 210.

A history of the development of the French language from Latin to the present.

777. Teaching College French. 5 hours.

An introduction to the teaching of French on the college level. An analysis of techniques used to teach listening, speaking, reading, and writing with an examination of current theories of language acquisition.

795, 796, 797. Study Abroad in French. 5 hours each.

801, 802, 803. Seminar: Medieval Literature. 5 hours each.

Prerequisite: FR 570F/770F or 870F or 871F or 625 or permission of department.

A specific author, genre or theme of the medieval period will be studied in detail with emphasis upon individual research. Given in French.

805, 806. French Literature of the 16th Century. 5 hours each.

A historical survey of French literature from the accession of Francis I to the death of Henry IV. Lectures, collateral readings, reports.

815, 816, 817. Seminar: 16th Century Literature. 5 hours each.

Prerequisite: FR 638 or 636 or 870F or permission of department.

Advanced study of a major writer or group of writers; of a major work or group of works, or of a genre. Given in English.

823, 824, 825. Seminar: 17th Century Literature. 5 hours each.

An intensive study of one major author or a group of authors with similar concerns. Given in French.

835, 836, 837. Seminar: 18th Century Literature. 5 hours each.

Prerequisite: FR 655 or 656 or 657 or permission of department.

An intensive study of one major author or a group of authors with similar concerns. Given in French.

847, 848, 849. Seminar: 19th Century Literature. 5 hours each.

Prerequisite: FR 665 or 666 or 667 or permission of department.

An intensive study of one major 19th Century author or literary movement. Given in French.

855. Methods of Bibliography and Research. 5 hours.

A study of the methods, techniques, and procedures of research. Special emphasis will be placed on the use of bibliographical resources.

856, 857, 858. Seminar: 20th Century Literature. 5 hours each.

An intensive study of one major 20th Century writer. Given in French.

870F, 871F. Introduction to Old French. 5 hours each.

A history of the French language from the appearance of the first texts in the 9th Century to the Renaissance, with linguistic analysis of representative texts. Phonology and morphology.

930. Thesis. 1-15 hours.

ITALIAN (ITA)

601, 602, 603. Independent Reading and/or Projects. 5 hours each.

Prerequisite: ITA 104, 360.

These courses allow students the opportunity to engage in individual study, reading or projects, under the direction of a project director who must be an assistant professor or higher. The courses may not be repeated for credit.

621. The Divine Comedy. 5 hours.

Prerequisite: ITA 104 or 306 or 310 or permission of department.

Detailed study of one of the most important works of literature provided in the western world. Given in Italian.

631. Petrarch and Boccaccio. 5 hours.

A study of early Italian humanism through the *Canzoniere* and selected prose works of Petrarch and the *Decamerone* of G. Boccaccio. Given in Italian.

671. The Italian Novel. 5 hours.

A study of the Italian novel from Manzoni to the present, including works by Verga, Pirandello, Svevo, Pavese, Vittorini, and Calvino. Given in Italian.

691. Topics in Italian Literature. 5 hours.

A study of specific Italian literary works, to be selected according to students' needs and interests. Selection may be determined by genre, author, or period. Lectures, papers and reports. Given in Italian.

801, 802, 803. Seminar: Medieval and Renaissance Literature. 5 hours each.

Prerequisite: ITA 310 or 360 or 421/621 or 431/631 or permission of department.

An in-depth analysis of specific Italian literary works and authors of the Middle Ages and Renaissance. Given in Italian.

811, 812, 813. Seminar: Literature Since 1700. 5 hours each.

Prerequisite: ITA 310 or 360 or 491/691 or permission of department.

An in-depth analysis of specific Italian literary works and authors since the 1700 to present. Given in Italian.

PORTUGUESE (POR)

620. Masterpieces of Luso-Brazilian Literature. 5 hours.

A study of major Portuguese and Brazilian writers from the beginning to the present. Given in Portuguese.

770P. (LIN) History of the Portuguese Language. 5 hours.

Prerequisite: SP 104 or FR 104 or ITA 104 or LAT 203 or permission of department.

A history of the Portuguese language from the appearance of the earliest texts until the present time with discussion of phonetics, morphology, semantics and loan-words. Given in English.

PROVENÇAL (PRO)

878, 879. Provençal Language and Literature. 5 hours each.

Development of the Provençal language from Latin; literature of Provence, with special attention to the poetry of the troubadours.

ROMANCE (ROM)

710. Introduction to Bibliography. 1 hour.

An introduction to the methods and materials of scholarly research. The student will learn

how to locate, use, and present information pertinent to the study of Romance languages.

800. Seminar in Romance Studies. 1 hour. (Max. 4 hours.)

Prerequisite: Permission of department.

Presentation of current research in Romance languages and literature.

850, 851. Readings and Research in Romance Literature. 5 hours each.

This course will require extensive and intensive readings in literature and in pertinent critical writings. The field to be covered will be determined by the student's previous background but will in all cases presume that the student is capable of reading rapidly with comprehension.

880. Romance Paleography. 5 hours.

A study of the leading scripts used in writing the Romance literatures of the Middle Ages, and of the techniques of editing works from these literatures.

890. (LIN) Romance Linguistics. 5 hours.

See LIN 890.

SPANISH (SP)

610. Spanish Culture and Civilization. 5 hours.

A study of the geography, history, arts, and letters of Spain and Latin America from the beginning, to the present. Emphasis will be placed on the modern historical, political and intellectual developments. Lectures, readings, and discussions in Spanish.

611. Spanish American Culture and Civilization. 5 hours.

A study of the geography and complex process of the cultural, historical and political evolution of the Spanish American countries from the origins of the indigenous civilizations to the present. Given in Spanish.

621. Colonial Spanish-American Literature. 5 hours.

Prerequisite: SP 312 or equivalent or permission of department.

In-depth study of the principal authors in the forefront of innovation and change in Spanish American letters, 1492-1800. Given in Spanish.

629. Spanish Literature to 1500. 5 hours.

Prerequisite: SP 428 or permission of department.

From the *Cantar de Mio Cid* to *Celestina*. A course devoted to the principle literary works in epic, lyric, *cuaderna vía*, prose and drama. Given in Spanish.

631. The Modernist Movement. 5 hours.

A study of Rubén Darío, his contemporaries, and followers. Given in Spanish.

638. Non-Fiction Prose of the Golden Age. 5 hours.

Prerequisite: SP 310 or permission of department.

A study of the 16th and 17th Century Non-fiction prose, with emphasis on representative works of the Spanish erasmism, mysticism, and political treatises of the Golden Age. Given in Spanish.

639. Prose Fiction of the Golden Age. 5 hours.

A study of the novel and short story of this period with emphasis on Cervantes. Given in Spanish.

640. Poetry of the Golden Age. 5 hours.

A critical study of the currents of Spanish poetry from 1500 to 1700. Given in Spanish.

641. Drama of the Golden Age. 5 hours.

Prerequisite: SP 440 or equivalent or permission of department.

Study of Golden Age drama and intensive reading and analysis of plays by the major dramatists, spanning the period from Lope de Vega through Calderón and his contemporaries. Given in Spanish.

657. 18th Century Literature. 5 hours.

A study of the developments in Spanish letters and thought in the 18th Century. Given in Spanish.

661. Spanish-American Drama. 5 hours.

An intensive study of the main trends, authors, and dramatic works from the colonial period to the present. Given in Spanish.

662. Spanish-American Short Story. 5 hours.

A study of the development of the short story in Spanish America from colonial times to the present. Given in Spanish.

663. Spanish-American Essay. 5 hours.

A representative study of the history of the essay in Spanish America from the colonial period to the present. Given in Spanish.

664. Spanish-American Novel. 5 hours.

A study of the novel as a literary form in Spanish America from colonial times to the present. Given in Spanish.

665. 20th Century Spanish-American Poetry. 5 hours.

The major poetic figures of the 20th Century since the Modernista Movement. Given in Spanish.

666. Prose Fiction of the 19th Century. 5 hours.

A study of the Spanish novel from the beginning of *costumbrismo*, regionalism, and realism to the end of the 19th Century. Given in Spanish.

667. Drama of the 19th Century. 5 hours.

The development of Spanish drama from Moratin's neoclassic comedies to the realistic plays of Galdós and the early Benavente. Special emphasis on the romantic drama. Given in Spanish.

668. Poetry of the 19th Century. 5 hours.

A study of Spanish lyric and narrative poetry from Romanticism to the end of the 19th Century. Given in Spanish.

675. Prose Fiction of the 20th Century. 5 hours.

The development of the Spanish novel from the Generation of 1898 to the present. Given in Spanish.

676. Drama of the 20th Century. 5 hours.

The development of Spanish drama from Benavente to the present. Given in Spanish.

677. Poetry of the 20th Century. 5 hours.

Readings in the poets of the various schools of the 20th Century. Given in Spanish.

678. Modern Non-Fiction Prose. 5 hours.

Prerequisite: SP 311 or permission of department.

A study of the 19th and 20th Century non-fiction prose, with emphasis on representative works of the Spanish-Krausism, Generation of 98, and Ortega y Gasset. Given in Spanish.

703. Oral Spanish for Teachers. 5 hours.

Development of advanced level listening and speaking skills emphasizing idiomatic aspects of Spanish grammar and vocabulary expansion.

707S. Applied Spanish Linguistics. 5 hours.

Prerequisite: SP 306 or permission of department.

The applications of the science of linguistics to the methodology of teaching Spanish. Given in Spanish.

756. Advanced Spanish Syntax and Composition. 5 hours.

A comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of Spanish. Given in Spanish.

757. Spanish Phonetics. 5 hours.

A study of the organs of speech, the difference in production of Spanish and English speech sounds, and the various speech phenomena. Practice in phonetic transcription, pronunciation, and intonation. Given in Spanish.

759. Comparative Stylistics. 5 hours.

Prerequisite: SP 306 or permission of department.

Emphasis on the expression of concepts through translations and free composition practice in the acquisition of idiomatic proficiency in the target language. Given in Spanish.

770S. (LIN) History of the Spanish Language. 5 hours.

A history of the development of the Spanish language from Latin to the present.

777. Teaching College Spanish. 5 hours.

An introduction to the teaching of Spanish on the college level. An analysis of techniques used to teach listening, speaking, reading, and writing with an examination of current theories of language acquisition.

795, 796, 797. Study Abroad in Spanish. 5 hours each.

Courses in Spanish offered by the Study Abroad Program of the University System of Georgia.

805, 806, 807. Literature of the Middle Ages. 5 hours each.

Prerequisite: SP 621 or permission of department.

Advanced study of a major writer or group of writers; a major work or group of works; or a particular genre. Given in Spanish.

811, 812, 813. Seminar: Spanish Literature of the 16th Century. 5 hours each.

Prerequisite: SP 638 or 639 or 640 or 641 or permission of department.

Study of the outstanding works in Spanish Renaissance and early Golden Age literature. Given in Spanish.

821, 822, 823. Seminar: Spanish Literature of the 17th Century. 5 hours each.

Prerequisite: SP 638 or 639 or 640 or 641 or permission of department.

An intensive study of one major Spanish Golden Age author and his works in a particular genre. (Drama: Lope de Vega, Tirso de Molina, or Calderón; the novel: Cervantes; or poetry: Góngora and Quevedo.) Given in Spanish.

835, 836, 837. Seminar: Spanish Literature of the 18th Century. 5 hours each.

Prerequisite: SP 657 or permission of department.

Topics include study of a genre, a theme, or a related group of authors. Given in Spanish.

845, 846, 847. Seminar: Spanish Literature of the 19th Century. 5 hours each.

Prerequisite: SP 666 or 667 or 668 or permission of department.

An intensive study of a major writer or writers, their literary work, or main trends of 19th Cen-

tury Spanish literature. Each author is studied in depth and the student has ample opportunity for individual research and additional intensive readings. Given in Spanish.

850, 851, 852. Seminar: 20th Century Spanish Literature. 5 hours each.

An intensive study of a representative writer, or writers, their works or trends of 20th Century Spanish literature, beginning with the Generation of 1898. Given in Spanish.

855. Methods of Bibliography and Research. 5 hours.

A study of the methods, techniques, and procedures of research. Special emphasis will be placed on the use of bibliographical resources.

861, 862, 863. Seminar: Spanish-American Literature. 5 hours each.

An intensive study of a representative writer or writers, their works, or of a major movement of Spanish American literature. Given in Spanish.

870S, 871S. (LIN) Introduction to Old Spanish. 5 hours each.

A history of the Spanish language from the appearance of the first Spanish documents until the Renaissance, with linguistic analysis of representative texts. Phonology and morphology.

930. Thesis. 1-15 hours.

SMALL ANIMAL MEDICINE (SMS)

John E. Oliver, Jr.
(Vet. Med. Bldg., South Campus)

The Department of Small Animal Medicine does not have a graduate degree program. Clinical internships and residency programs are offered. Residents are enrolled in graduate degree programs of other departments in the College.

620ABCD. Surgery. 5 hours each.

Prerequisite: DVM degree or equivalent and permission of department.

Students will utilize advanced surgical techniques for resolution of soft tissue and orthopedic surgical problems.

631. Acute Pathophysiology. 5 hours.

Prerequisite: DVM degree or permission of department.

The pathophysiology of patients which are critically ill or injured will be discussed. Emphasis will be placed on applying these principles of pathophysiology to understanding the mechanism and response to therapy of syndromes involving the critical patient. Course format will be that of lecture, seminar, and literature review.

651ABCD. Internal Medicine. 5 hours each.

Prerequisite: DVM degree or equivalent and permission of department.

Students will consider pathophysiologic mechanisms, diagnostic and therapeutic methods of internal medical disorders. Students will utilize advanced instrumentation and laboratory techniques for the investigation and resolution of specific disease conditions.

699ABC. Special Problems. 2-5 hours.

801. Seminar in Medicine and Surgery. 1-3 hours.

Prerequisite: DVM degree or equivalent and permission of department.

Graduate students and staff members will regularly participate in review and discussion of current research findings and methodology concerning medical and surgical disorders of animals.

SOCIAL WORK (SW)

Charles A. Stewart
(Tucker Hall, South Campus)

The School of Social Work graduate curriculum is a six-quarter program leading to the Master of Social Work degree. Admission may be obtained by persons holding bachelor's degrees in any field if potential for graduate professional education is demonstrated. Advanced standing may be awarded select applicants, including graduates of undergraduate social work programs accredited by the Council of Social Work Education. The program for applicants eligible for advanced standing is five quarters in length.

Graduate assistantships and federal traineeships are available in limited numbers. In addition, a few public and voluntary agencies offer stipends.

The program includes three quarters in field instruction. Areas of specialization are Health, Family and Children, Mental Health, the Aged, and School Social Work. Students may select a clinical or organizational practice focus.

601. Social Work as a Profession. 1-5 hours.

Nature and scope of social work, characteristics of the profession, values and ethics of the profession, implications to the profession of various current issues. Role and authority of the social worker. Example: Seminar in Racism and its Implication to Social Work.

602. Social Work Methods I. 5 hours.

A foundation course on social work practice with emphasis upon fundamentals of interviewing and the development of relationships.

603. Social Work Methods II. 5 hours.

The elements of administering social service programs are examined within the contexts of the organization and the community.

641. Bases of Social Functioning. 5 hours.

A basic course on human behavior in the social environment with emphasis upon the psychosocial development of individuals and families over the life span.

642. Human Behavior and Social Environment — Large Social Systems. 5 hours.

Prerequisite: Permission of school.

An examination of the structure and dynamics of organizations, communities, and groups with implications for social policy and social work intervention.

643. Cultural Diversity and Social Work Practice. 1-5 hours

This seminar examines culture and social class as variables affecting the functioning of individuals and family groups. Social stratification and associated value patterns as related to cultures such as American Indians, Blacks, Orientals, Spanish speaking as well as white ethnic groups are discussed and compared.

652. Social Work with Abusing and Neglecting Families. 5 hours

An examination of current knowledge about child abuse and neglect. Implications for social policy and social work practice with families is emphasized.

670. Social Welfare Policy and Services. 5 hours

This course examines in-depth social welfare structures, functions, policies, programs, and costs as an organized societal response to human needs. Emphasis is placed on the process involved in establishing, shaping, and changing social policy.

690B. Social Work Research. 1-10 hours

Readings course for the independent researching of a social welfare program under the direction of a faculty member.

707. Seminar on Social Work Practice Theory I. 1-5 hours.

Prerequisite: Permission of school.

An examination of social work practice models and intervention procedures with the focus on the individual client.

708. Seminar on Social Work Practice Theory II. 1-5 hours.

Prerequisite: SW 603.

Application of theory of organization of social services delivery systems; applied analysis of diagnostic and intervention schema in a given social work practice situation; ethical/professional issues in social work practice.

709. Social Work Treatment with Groups. 5 hours.

Prerequisite: Permission of school.

An examination of social work practice models and intervention procedures with a specific focus on small groups.

710. Social Work Practicum I. 1-15 hours

Prerequisite: SW 603, 642, 643.

The beginning practicum assignment for master's degree candidates is designed to

enable students to develop advanced problem skills in relation to individuals, groups, the community and/or the organizations which deliver social services. Students will be expected to demonstrate self-directed learning skills in addition to problem-solving interpersonal skills and personal awareness competencies.

711. Social Work Practicum II. 1-15 hours.

Prerequisite: SW 710.

SW 711 follows successful completion of SW 710 and is designed to enable the student to develop advanced problem solving skills in social work practice. Theoretical explanations and justification of intervention processes and outcomes will be expected. The student is expected to perform tasks with less supervision than in the preceding course.

712. Social Work Practicum III. 1-15 hours.

Prerequisite: SW 711.

This course is a continuation of SW 711 and is designed to enable the student to evaluate a service delivery system, proposing alternative programs and assessing feasibility of program change. In addition the student will continue with assigned tasks from previous quarter if indicated.

720A. Social Work and Health. 1-5 hours.

Prerequisite: SW 602, 642, 643.

Introduction to the Social Worker's role in primary, secondary and tertiary health care.

720B. Social Work with Family and Children's Services. 1-5 hours.

Prerequisite: SW 602, 642, 643.

Analysis of public and private social services affecting children and families. Examination of the historical societal responsibility and the social work function.

720C. Social Work and Mental Health. 1-5 hours.

Prerequisite: SW 602, 642, 643.

Introduction to the Social Worker's role in primary, secondary and tertiary health care.

720D. Social Work and the School. 1-5 hours.

Prerequisite: SW 602, 642, 643.

A critical analysis of various models of social work practice in the public school. Criteria for determining the appropriateness of these models in various educational settings. The study of the relationship of social work practice approach to the major problem of pupils, families and the school.

720E. Social Work with the Aged. 1-5 hours.

Prerequisite: SW 602, 642, 643.

A graduate seminar to promote study and exploration of issues in the field of aging. Focus

on problem identification, analysis and problem solving approaches with emphases on direct service delivery and the interface with policy formulation.

721A. Social Work and Health: Public Policy and Regulations. 1-5 hours.

Prerequisite: SW 720A.

Examination and analysis of the legal and regulatory basis of social work practice in the health field.

721B. Social Work with Family and Children: Public Policy and Regulations. 1-5 hours.

Prerequisite: SW 720B.

Major attention is given to structure of services and range of programs from prevention to protection and placement. Special emphasis on support services for families, unmarried parents and children in need of placement. Analysis of differential practice roles and interventions.

721C. Social Work and Mental Health: Public Policy and Regulations. 1-5 hours.

Prerequisite: SW 720C.

An examination of public mental health policy, legal and regulatory implications for mental health service delivery.

721D. School Social Work: Public Policy and Regulations. 1-5 hours.

Prerequisite: SW 720D.

Seminar is intended to examine a number of major issues affecting the provision of social services in the public schools.

721E. Social Work with the Aged: Public Policy and Regulations. 1-5 hours.

Prerequisite: SW 720E.

A graduate seminar to promote study and exploration of issues in the field of aging. Focus on macro-system with emphases on policy formulation and evaluation; political and economic aspects of administration and management of programs for the aged and the interface with direct service delivery systems.

722A. Social Work and Health: Issues. 5 hours.

Prerequisite: SW 721A.

An integrative seminar focused on current social work and health issues.

722B. Social Work with Family and Children: Issues. 5 hours.

Prerequisite: SW 721B.

An integrative seminar on Family and Children Service practice issues. Creating practice strategies and service delivery models which manage or resolve practice issues.

722C. Social Work and Mental Health: Issues. 5 hours.

Prerequisite: SW 721C.

Integrative seminar focused on current social work and mental health issues.

722D. School Social Work: Issues. 5 hours.

Prerequisite: SW 721D.

The course is a study of the interaction of public education and social welfare as a societal response to the problems of children and families — an examination of the process involving learning, social control, and social change.

722E. Social Work with the Aged: Issues. 5 hours.

Prerequisite: SW 721E.

Issues in social work practice with the aged. A graduate seminar on social work intervention with the aged. Specialized knowledge of assessment, treatment and evaluation of direct social work services to the aged.

744. Social Work Treatment of Children and Adolescents. 1-5 hours.

Prerequisite: SW 602 or permission of school. Social work practice specific to social treatment of the problems of children and adolescents.

790. Seminar on Social Policy Analysis and Program Evaluation. 5 hours.

Prerequisite: SW 712.

Analysis of the forces that shape social welfare policy. Examination of the nature and function of social welfare policy. Evaluation of the approaches to policy analysis and their effects upon social welfare services.

804. Innovations and Change in Social Systems. 1-10 hours.

Prerequisite: Permission of school.

Seminar on organizational and community change strategies to affect social policy.

805. Seminar in Contemporary Issues in Social Planning. 5 hours.

Prerequisite: SW 603 or permission of school. Seminar on the various models and on the process of social planning for the delivery of social services.

832. Social Work Research. 1-10 hours.

Research methodology relevant to social work. The formal rules of scientific inquiry. The canons governing the gathering, evaluation and interpretation of data. Example: Seminar in Analysis of Current Social Work Research.

833. Evaluation Research in Social Work. 5 hours.

Prerequisite: SW 832 and permission of school.

Evaluation research and its various conceptualizations as stages in evaluation. The relationship and application to social work practice.

841. Seminar in Personality Development. 1-10 hours.

Prerequisite: SW 641 or permission of school. Various theories of personality development which emphasize cognitive, psychological, social and biological concepts. The emphasis is on the theoretical basis and diagnostic classification of mental disabilities.

843. Seminar in Family Dynamics. 5 hours.

Family structure and dynamics through various stages in the developmental cycle, in responses to both "normal hazards" of everyday living and special circumstances. The family being seen as a matrix for individual development.

849. Psychosocial Aspects of the Middle and Later Years. 5 hours.

Prerequisite: SW 641 or permission of school. An advanced human behavior course to examine theories of human development in middle and old age as related to social practice and social policy.

905. Social Work Education Practicum. 5 hours.

Individually structured participation in a variety of educational roles: curriculum design, coordination, class and field teaching.

921. Research Problem. 1-10 hours.

Prerequisite: SW 832 or equivalent.

A written report on a problem in social work.

930. Thesis. 1-15 hours.

941. Seminar in Social Work Supervision and Staff Development. 5 hours.

Prerequisite: Permission of school.

Seminar on social work supervision and staff development in a social service agency.

943. Seminar in Treatment Approach—Adults and the Aged. 5 hours.

Prerequisite: SW 602 or permission of school. An advanced social work practice seminar on the application of various models and procedures of casework, group work and family treatment to the problems of adults in middle and old age.

944. Seminar Treatment Approach with Families. 5 hours.

Prerequisite: SW 602 or permission of school. An advanced social work practice seminar focusing on the social treatment of family problems.

945. Seminar in Marital Counseling Approaches. 5 hours.

Prerequisite: SW 944.

Analysis of selected problems with practice and differential aspects of assessment, treatment, and evaluation.

980. Theory and Practice of Social Work Consultation. 1-5 hours.

Examination and investigation of the theory and practice of consultation as used in social work, mental health, and other community service agencies. Focus aimed at purpose, issues in process, reporting, and evaluation.

SOCIOLOGY

(SOC)

Albeno P. Garbin
(Baldwin Hall, North Campus)

The department offers programs leading to the degrees Master of Arts and Doctor of Philosophy in sociology. Specialized study is provided in the areas of methodology, the community, deviance, social organization, demography, marriage/family, occupations/professions, social psychology, social stratification/mobility, rural sociology, and the sociology of education. No foreign language is required for the master's or doctoral degrees.

The department has cooperative programs with the Institute of Community and Area Development, the Institute of Government, and the College of Agriculture. Research facilities include the Demographic Research and Training Center, the Institute for Behavioral Research and the University Computer Center.

602. Structure and Functioning of American Society with Emphasis on Black Structure. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

A functional analysis of black institutions in relation to contemporary society.

607. Juvenile Delinquency. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

A detailed analysis of the nature, extent, and causes of juvenile deviance and delinquency with special emphasis on the handling of juveniles in the criminal justice system and on programs designed to treat or prevent delinquency.

609. Social Change. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

The social process of social change; causes, types and theories of change.

610. Sociology of Medicine. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

A sociological analysis of the interrelationship between illness and the social system. Special attention is given to health care organization.

611. Social Organization. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

The study of a general model of the social system and the development of a consistent set of theories concerning the structure and process of groups and such complex systems of behavior as organizations, communities and societies.

622. Development of Sociological Theory. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

A survey of some of the most important systems in the development of sociological theory.

623. German Social Theorists. 5 hours.

Prerequisite: SOC 105.

An analysis of German sociological thought in the 19th and 20th Centuries. The course will focus on three major theorists (Marx, Simmel and Weber) and three major systems of thought (critical theory, phenomenology, and the sociology of knowledge).

627. Personality and Social Structure. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

Foundation and development of personality; mechanisms of integration and adjustment; roles of culture, groups and language; concepts of self; types and theories of personality; deviant personalities.

628. Sociology of Sex Roles. 5 hours.

Prerequisite: SOC 105.

An analysis of the structure of sex roles in American Society as well as relevant cross-cultural comparisons. With a dual emphasis on methodology and content, it will include an analysis of sex role differences, the intermeshing of sex roles and social change, sex as a stratifying variable and the social psychological aspects of femininity and masculinity.

631. Rural Social Systems. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

An investigation into the characteristics and the organization of the changing rural society. Analysis of the social organization of agriculture and rural-urban relations will be emphasized.

632. The Sociology of Urban Life. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

Development of the city as a social phenomenon in the modern world. Analysis of urban trends, characteristics, functions and social

organization. Sociological elements in urban planning, housing and metropolitan dominance, and growth patterns in new centers of urbanization.

633. Population Theory and Problems. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

Theory and dynamics of population growth; population pressure; migration; composition; differential fertility; theories of the quality and optimum population; economic and social aspects of our population.

635. The Community. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

A study of the community as a unit of social organization. Contemporary trends in community organization and planning.

637. Race Relations in the United States. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

An examination of the social problems associated with race and minority relations in contemporary American society.

642. American Stratification System. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

A systematic analysis of the nature of social status systems, including caste, estate, and class, and an examination of the form stratification differences take in the United States. Topics covered include: perception of class distinctions, the factors of prestige and power, criteria of status evaluation, class effects on social relationships and differences in life styles, class and personality development.

652. Fertility of the Population. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260); SOC 451/651 or permission of department.

Levels, trends and differentials in fertility among various population groups; techniques and problems of measurement; and the social, psychological and biological aspects of human fertility.

654. Migration of the Population. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

Study of internal and international population, analysis of migration streams, and techniques for analyzing migration rates. Also short-distance residential mobility will be examined.

656. Techniques of Population Analysis. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

Techniques for analyzing the composition of the population; constructing life tables; measuring vital processes; and estimating population and migration.

661. (CFD) The Family. 5 hours.

See CFD 661.

665. Sociology of Aging. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

An examination of the sociological approaches to aging, the status of older people, their roles in the community and society, demographic aspects of aging, and their interrelationships with society and social institutions.

666. Aging and Modernization: Cross-Cultural Studies. 5 hours.

Prerequisite: SOC 105 or GNT 600 or SOC 256 or 260.

An analysis of the aging experience in different societies and historical periods. The course will focus on differences in patterns of aging among societies of varying levels of modernization and on the impact on age relations of the transition from an agrarian economy to an industrial one.

671. (PHY) Philosophy of Social Science. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

A study of the methods and problems of inductive reasoning, including the nature of probable inference, techniques of verification, and the structure of scientific explanation, with special reference to the social sciences.

680. Industrial Sociology. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

A study of human relations in the industrial setting and the relationship of industrialization and the work environment to the worker, the community and the larger society.

681. Criminology. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

The study of the nature, extent, and factors related to criminal behavior. Focus will be on the criminal justice system; the police, the judiciary and corrections (probation, imprisonment, parole, work release, and half-way houses.)

683. Sociology of Law. 5 hours.

Prerequisite: SOC 105, three upper division social science courses or permission of department.

A study of the social nature of law, and how the legal system reflects the broader social context within which it exists. The law and the legal system are seen as natural phenomena and another manifestation of social activity.

685. Sociology of Occupations. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

A comparative study of work positions and roles in modern American society with emphasis given to such topics as occupational choice, socialization, worker adjustment, prestige, and mobility.

695. Large Organizations. 5 hours.

Major approaches to the study of large organizations; theories of bureaucratic structure; relationships of personality to formal and informal structures.

702. Community Development. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

A study of approaches, principles, techniques, and programs of comprehensive community development.

715. Seminar in Corrections. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

Review of principles of correction; field observation and analysis of current practices; evaluation of observations and development of career potential in various aspects of criminal justice administration.

716. Special Projects in Applied Criminology. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

A study in depth, beyond the level of survey, of the most important literature of theories and practices in criminal justice. The course will provide a critical analysis of the literature.

728. (EPH) Sociology of Education. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260).

Social perspectives on education: the society, the community, and the school.

759. Community Reconnaissance Methods. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260); SOC 435/635.

A study and application of methods of research in community organization for action programs. The application will include sched-

ule preparation, field interviews, analysis of data and preparation of community reports.

800. Special Topics in Sociology. 5 hours.

Opportunity to do intensive study, on an individual basis, in the field of the graduate student's major interest.

820, 821, 822. Seminar in Sociological Theory and Research. 5 hours each.

A study of theoretical and methodological problems in substantive areas of sociology. Topics will vary with interests of the students and instructors.

830. Theory I: Classical Sociological Theory. 5 hours.

Prerequisite: SOC 105 or permission of department.

A detailed study of the work of Marx, Weber, Durkheim, Simmel and Mead. At the choice of the instructor, secondary emphasis may be given to other theorists, such as Pareto, Toennies and Freud.

832. Theory IIA: Theories of Social Organization. 5 hours.

Prerequisite: SOC 830 or permission of department.

A comprehensive analysis and review is made of theories and research pertaining to the structure or organization of human social system. Consideration is given to the structure of groups, organizations, communities, societies, social institutions and systems of power and social rank.

833. Theory IIB: Theories of Social Stratification. 5 hours.

Prerequisite: SOC 830 or permission of department.

A critical examination of the major theoretical approaches developed for understanding and explaining societal stratification and social mobility. Consideration will be given to the writings of Marx, Veblen, Mosca, Weber, Parsons, Sorokin, Davis, Moore, Dahrendorf and Lenski. The works of other theorists will be considered in accordance with student interests.

835. Theory IIC: Theories of Deviance. 5 hours.

Prerequisite: SOC 830 or permission of department.

A systematic and critical analysis of the major sociological theories on deviance, including an examination of both traditional and current theories. Consideration will be given to conceptualizations of deviance, the association between deviance theories and research methods used to study deviance, and the rela-

tionship of deviance theories with general sociological theories.

836. Theory IID: Theories of Demography. 5 hours.

Prerequisite: SOC 830 or permission of department.

Presentation and evaluation of general theories of demography, both micro and macro-analytical. The major emphasis is upon contemporary sociological theories.

837. (PSY) Theory IIE: Theories of Social Psychology. 5 hours.

Prerequisite: SOC 830 or permission of department.

An advanced survey of theoretical and conceptual frames of reference that contribute to our knowledge of social psychology including consideration of such theories as cognitive consistency, social exchange, symbolic interaction, role theory, group process and collective behavior.

841. Theory III: Current Trends in Sociological Theory. 5 hours.

Prerequisite: SOC 830 or permission of department.

An analysis of the major contemporary work in sociological theory with special emphasis on the points of continuity between current theories and the classical work of Durkheim, Mead, Marx, Weber and Simmel. Consideration is given primarily to North American and European theorists.

845. Theory IVA: Constructing Sociological Theories and Models. 5 hours.

Prerequisite: SOC 841.

A study of the nature and testing of scientific theory, with special reference to theory in sociology. The characteristics of formal axiomatic systems and their use as a basis for

empirical theory will be discussed. Problems of deducing and testing theoretical propositions will be a central concern. Existing formal or semiformal theories in a selected area of sociology will be presented and critically appraised with respect to empirical adequacy, falsifiability, predictive and explanatory power, parsimony, and other criteria.

846. Theory IVB: Seminar in Contemporary Sociological Theory. 5 hours.

Prerequisite: SOC 841.

Selective study of materials surveyed in Theory I and Theory III. Each seminar is organized around a topic which highlights modern theoretical developments in cultural, institutional, and interactional analysis. These developments are placed in context of enduring issues of sociological theory, as reflected in the writings of the classical figures.

853. Methods I: Methods of Data Collection. 5 hours.

Principles of data collection; questionnaire and interview schedule construction; observational methods; use of secondary sources; problems of reliability and validity.

900. Methods III: Research Practicum. 5-10 hours.

Prerequisite: SOC 854.

Students will engage in an apprenticeship research program with a departmental faculty member to gain firsthand experience in conducting sociological research. Each student is expected to formulate a researchable problem, design an appropriate method for solving the problem, analyze and interpret the data, and prepare a written report. Registration is open only to doctoral students in sociology.

930. Thesis. 1-15 hours.

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SPEECH COMMUNI- CATION (SPC)

Cal M. Logue
(*Geography-Geology-Speech Building,
South Campus*)

Requirements for the Master of Arts in speech communication include: (1) 40 hours; (2) SPC 659, Foundations of Rhetorical Theory, and SPC 720, Communication Theory; (3) Either SPC 655, Rhetorical Composition and Criticism, or SPC 751, Seminar in Quantitative Research in Speech Communication, and; (4) thesis.

The Department of Speech Communication also encourages interdisciplinary programs. With the approval of his advisor, a student studying speech communication may take courses from such related areas as psychology, statistics, radio-television, journalism, education, history, political science, sociology, management, and business.

655. Rhetorical Composition and Criticism. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in speech communication or English.
An advanced course dealing with the study of rhetorical theory and criticism.

656. (MAN) Group Discussion and Conference Leadership. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in speech communication, business administration, education or permission of the department.

A study of the theory and techniques of group discussion with emphasis on current experimentation and research.

659. Foundations of Rhetorical Theory. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in speech communication or English.

A study of origin and development of rhetorical theory from ancient to modern times.

662. Communication Strategies in the Courtroom. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in social science, journalism, or related areas.

Examines modern communication theories and their application to legal proceedings.

663. Communication Strategies in Government. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in social science, journalism, or related areas.

A study of communication strategies and activities in the executive and legislative branches of American government with some emphasis on communication case studies.

664. Communication Strategies in Religion. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in social science, journalism, or related areas.

A study of the theory and practice of communication in religious settings. Emphasis will be placed on communication within particular religious communities and communication from such groups to society generally.

665. Communication Strategies in Political Campaigns. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in social science, journalism, or related areas.

The role communication plays in deciding which candidates will run for office, the nomination of candidates, and the election of candidates to office.

666. (PSY) Psychology of Speech Communication. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in speech communication, psychology, or English.

A study of speech as a psychological phenomenon with consideration of the use of symbols, the speech personality, emotional reactions and mental processes in speech communication, and psychological studies of language and vocal and visual symbolism.

667. (MAN) Interviewing. 5 hours. Two double periods weekly.

A review of various theories of interpersonal communication and of pertinent research in the area of interviewing. Application of modern communication theory to interview situations. A consideration of the various types of interviews and the problems unique to each type with a variety of teaching techniques employed.

669. Communication Strategies in Social Movement. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in social science, journalism, or related areas.

An examination of the rhetorical nature of social movements with theories of communi-

cation strategies applied in several case studies.

672. Communication Strategies in International Affairs. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in social science, journalism, or related areas.

A study of the communication strategies of nations in two focal areas. First, the intranational communications involved — such as Presidential speeches to the public and Congress; discussions by Cabinet members (e.g., before the Cuban Missile Crisis) or Congressional Committees (e.g., in Tonkin Resolution). Second, the strategies of nations communicating with each other in settings like the UN, the Munich Conference, and the Versailles Treaty negotiations. Attention will be given both to case studies and general principles or theories.

673. Classical Rhetoric. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in English, classics, or speech communication.

A study of the development of classical rhetoric in the Greek and Roman periods; Plato to Quintilian.

678. Modern Rhetorical Theory. 5 hours. Two double periods weekly.

Prerequisite: Two senior division courses in social science, journalism, or related areas.

A study of the development of rhetorical theory from 1700 to the present.

720. (JRL) Communication Theory. 5 hours. Two double periods weekly.

Prerequisite: SPC 108 or 256 or equivalent, or JRL 101.

Familiarizes the student with the fundamental nature of and problems in interpersonal and group communication. Communication is studied from the scientific perspective with emphasis on factors that measurably affect quality of communication. Students analyze communication situations of their own choice.

722. (JRL) Mass Communication and Persuasion. 5 hours.

See JRL 722.

750. Teaching of Debate. 5 hours. Two double periods weekly.

Prerequisite: Two or more senior division courses in education or speech communication.

Principles of argumentation and debate with emphasis on administration of the secondary school debate program.

751. Seminar in Quantitative Research in Speech Communication. 5 hours. Two double periods weekly.

Prerequisite: STA 200 and two senior division courses in speech communication, education, sociology, psychology, or permission of department.

Analysis of studies, design and execution of projects in communication.

793. (ESP) Speech Communication for the Elementary Teacher. 5 hours.

Prerequisite: Two senior division courses in speech communication, drama and/or elementary education.

A study of the various speech activities for elementary school children.

855. Nature of Oral Language. 5 hours. Two double periods weekly.

A study of the meaning and uses of word symbols and their relation to behavior and speech communication problems.

856. (MAN) Seminar in Group Discussion. 5 hours.

Intensive examination of research in small group communication with major emphasis of those variables which exert greatest influence. Course includes consideration of recent research findings as well as those studies recognized as central to the area of investigation.

896. (MAN) Seminar in Communication and Conflict. 5 hours.

A study of communication in situations of conflict. Communication problems in such areas as race relations, campus confrontation, and labor-management disputes will be analyzed.

900. Research Seminar and Special Problems in Speech Communication. 5 hours.

Prerequisite: Two graduate courses in speech communication.

Individual directed study of research under supervision on research problems in speech.

930. Thesis. 1-15 hours.

996. (MAN) Seminar in Organizational Communication. 5 hours.

See MAN 996.

STATISTICS AND COMPUTER SCIENCE

Lynne Billard
(Boyd Graduate Studies Building,
South Campus)

The Department of Statistics and Computer Science offers a Master of Science (MS) degree in statistics, a Doctor of Philosophy (PhD) degree in statistics, and a Master of Applied Mathematical Science (MAMS) degree. The MS degree has two options, one in Applied Statistics and the other in Mathematical Statistics. In both options, preparation of an MS thesis is optional. The thesis option requires a minimum of 40 quarter hours of graduate credit exclusive of thesis and the non-thesis option requires a minimum of 55 quarter hours. The PhD degree requires basic core course work equivalent to the mathematical statistics option of the MS degree plus work in advanced probability and inference; otherwise the student can select advanced course work according to his own special interests.

Graduate students in the department may expect to have assignments that include teaching, applied research and consulting experience in addition to their course work and the basic research experience involved in completing their dissertation. A close association exists between the University Computer Center and the Department of Statistics and Computer Science and thus the computational facilities of the Center are available to graduate students for the more complex or lengthy computations. In addition, the department maintains computational and data preparation laboratories, including a CDC 18/30.

Courses in advanced calculus and linear algebra are required as prerequisites for all graduate students in statistics.

COMPUTER SCIENCE (CSC)

Courses 700 and 703 are undergraduate/graduate service courses. Graduate credit for these is not available to majors in statistics or computer sciences, but only to non-majors with the consent of their major departments.

611. Data Management. 5 hours.

Prerequisite: CSC 500/700 or MS 209 or CSC 201 and 503/703.

A service course dealing with the file storage/manipulation capabilities of large computers. The course covers those data structures needed as background and includes a discussion of database management systems. May not be used for major credit. No credit if credit already gained for CSC 303 or 437/637 or 438/638.

632. Computer Systems Organization I. 5 hours.

Prerequisite: CSC 302 or 501/701.

Functional structure of hardware components and their interrelationship, input/output facilities, control functions, microprocessors.

633. Computer Systems Organization II. 5 hours.

Prerequisite: CSC 432/632.

Operating system components, structure of multi-programming systems, teleprocessing.

634. Numerical Methods for Scientific Computation I. 5 hours.

Prerequisite: CSC 302 or 500/700, MAT 256.

Principles for writing subroutines for mathematical computer programs including series solutions, continued fractions, numerical quadrature, and interpolation.

635. Numerical Methods for Scientific Computation II. 5 hours

Prerequisite: CSC 434/634; coreq. MAT 358 or 410/610.

Subroutines for general quadratures, differentials equations, matrix calculations, conversational and real-time scientific programs.

637. Database Management I. 3 hours.

Prerequisite: CSC 303 and 503/703.

A two-quarter sequence on computerized data management. The first quarter concentrates on computer file organization, access, and retrieval techniques. Consideration is given to sequential files, indexed sequential files, and direct files, especially as used with COBOL programming language.

638. Database Management II. 3 hours.

Prerequisite: CSC 437/637.

A continuation of CSC 437/637. Large database management systems based on the hierarchical model, the network model, and the relational model, are studied.

647. (MAT) The Design and Analysis of Computer Algorithms I. 3 hours.

See MAT 647.

648. (MAT) The Design and Analysis of Computer Algorithms II. 3 hours.

See MAT 648.

649. (MAT) The Design and Analysis of Computer Algorithms III. 3 hours.

See MAT 649.

657. Design and Construction of Compilers I. 3 hours.

Prerequisite: CSC 303.

First of a three-quarter sequence covering compilers for high-level programming languages. Emphasis is on context free grammars, various parsing techniques, and a project in which a working compiler is developed.

658. Design and Construction of Compilers II. 3 hours.

Prerequisite: CSC 457/657.

A continuation of CSC 457/657.

659. Design and Construction of Compilers III. 3 hours.

Prerequisite: CSC 458/658.

A continuation of CSC 458/658.

661. Automata and Formal Languages. 5 hours.

Prerequisite: MAT 256; permission of department.

A survey of the fundamental mechanisms which underlie computer science, including finite state machines, tape machines, Turing machines, push-down automata. Corresponding formal language constructs and computability criteria will be covered.

690. Special Topics in Computer Science. 1-5 hours.

Prerequisite: CSC 302.

A special topics course for upper division computer science majors and graduate students taken with permission of the department. Opportunity for independent study in advanced computer science topics, research on current software development projects, or participation in a work/study program on computer center operation and administration.

700. Computer Programming. 5 hours.

Prerequisite: MAT 109 or 116.

An introductory computer programming course for upper division non-computer science majors and graduate students. Topics covered include algorithms, programs, computers, programming projects in the FORTRAN language, computing applications, digital representation of data, and an introduction to assembler language programming.

701. Advanced Programming Techniques. 5 hours.

Prerequisite: CSC 500/700.

Advanced computer programming techniques, programming projects in several languages; system hardware/software facilities.

703. Commercial Data Processing. 5 hours.

Prerequisite: Credit for or exemption from MAT 100.

An introductory computer programming course for upper division non-computer science majors and graduate students. Computer programming for business and commercial applications using the COBOL language.

910. Technical Report. 5 hours. (Max. 10 hrs.)

Prerequisite: 40 hours at the 600 or 800 level. For use with the professional Master's degree in Applied Mathematical Sciences — Computer Science/Statistics option.

STATISTICS (STA)

621. Statistical Methods I. 5 hours.

Prerequisite: Credit for or exemption from MAT 100.

Basic concepts of statistical models, sampling, variability in sample data, distribution, estimation of parameters, simple tests of significance, t-tests, analysis of variance, chi-square tests, and simple regression and correlation. Special sections for social scientists and biological scientists are provided. These sections are designated in the schedule of classes.

622. Statistical Methods II. 5 hours.

Prerequisite: STA 421/621.

Analysis of variance with multiple classification, covariance, multiple regression, multiple and partial correlation, elements of experimental design.

623. Applied Regression Analysis. 5 hours.

Prerequisite: STA 422/622 or permission of department.

Study of applied methods in regression analysis. Topics include review of simple

linear regression, techniques of multiple regression and model building, multiple and partial correlation, analysis of variance as a regression analysis, comparison of various regression models, analysis of covariance, selecting the best regression equation, analysis of residuals.

624. Sampling and Survey Methods. 5 hours.
Prerequisite: STA 421/621.

Design of sample surveys, biases, variances and cost estimators. Comparison of simple random sampling, ratio estimation, stratification, multi-stage sampling.

628. Applied Time Series Analysis. 5 hours.
Prerequisite: STA 422/622.

Autoregressive, moving average, autoregressive-moving average, and integrated autoregressive-moving average processes seasonal models, autocorrelation function; estimation; model checking; forecasting; spectrum, spectral estimators. Graduate statistics majors may take it but it will not count towards graduate credit for their program.

636. Statistical Computation. 5 hours.
Prerequisite: CSC 201 or 500/700, MAT 256, STA 422/622.

Algorithms for data analysis computation, characteristics of and criteria for evaluating statistical packages, use of and interpretation of output from current statistical packages.

651. Statistical Theory I. 5 hours.
Prerequisite: MAT 255 and an introductory course in statistics.
An introductory course in statistical theory.

652. Statistical Theory II. 5 hours.
Prerequisite: STA 451/651.
Continuation of STA 451/651.

671, 672, 673. (MAT) Introduction to Probability Theory. 3 hours each.
See MAT 671, 672, 673.

803. Advanced Scientific Programming. 5 hours.
Prerequisite: CSC 435/635 or equivalent.
Scientific programming systems, advanced concepts in computation, error propagation, simulation.

804. Process Control and Information Systems. 5 hours.
Prerequisite: CSC 434/634.
Information retrieval, econometric models, management information systems, process evaluation and control.

820. Design of Experiments for Research Workers. 5 hours.
Prerequisite: STA 422/622.

Methods for constructing and analyzing designs for experimental investigations; concepts of blocking; randomization and replication; experimental unit technique; complete block designs; confounding in factorial experiments; fractional replication; incomplete block designs.

823. Statistical Analysis. 5 hours.
Prerequisite: STA 422/622 and 452/652.
Sequential methods, non-parametric methods, non-linear estimation, mixed models.

824. Sampling and Survey Theory. 5 hours.
Prerequisite: STA 424/624 and 452/652.
Selected topics in sampling and survey theory at an advanced level.

825. Multivariate Methods. 5 hours.
Prerequisite: STA 422/622.
Multivariate tests of hypotheses, confidence regions, multivariate analysis of variance, discriminatory analysis, factor analysis, correlations.

826. Linear Statistical Analysis. 5 hours.
Prerequisite: STA 422/622 and 451/651.
Analytical theory of least squares, general linear model, application to designs.

829. Advanced Experimental Design. 5 hours.
Prerequisite: STA 422/622 and 451/651.
Selected topics in the field of experimental design.

830. Multivariate Analysis. 5 hours.
Prerequisite: STA 854 and 825.
Selected topics in the theory of multivariate analysis at an advanced level.

853. Advanced Statistical Inference I. 5 hours.
Prerequisite: STA 452/652.
Advanced probability theory, limit theorems, distribution theory, multinormal distribution, decision theory, theory of estimation, confidence regions, theory of tests of hypotheses.

854. Advanced Statistical Inference II. 5 hours.
Prerequisite: STA 853.
Selected topics in tests of hypotheses, sequential analysis and decision theory, theory of estimation at an advanced level.

856. Statistical Distribution Theory and Non-parametric Statistics. 5 hours.
Prerequisite: STA 854.
Selected topics from the theory of statistical distributions. Study of tests of hypotheses which may be made without specification of the underlying distribution.

857. Statistical Decision Theory. 5 hours.
Prerequisite: STA 853.
Game theory and decision theory, the main

theorems of decision theory, conjugate prior distributions and limiting posterior distributions, sequential decision problems, empirical bayes method of estimation.

870. Stochastic Processes. 5 hours.

Prerequisite: Permission of department.

Discrete and continuous Markov processes, birth and death processes, diffusion theory and power spectra.

890. Advanced Problems in Statistics. 5 hours.

Prerequisite: Permission of department.

Selected topics concerning recent developments in statistics.

891. Statistical Seminar. 1-5 hours.

Prerequisite: Permission of department.

900. Research in Statistics. 1-15 hours. (Max. 60 hours.)

Prerequisite: 40 hours at 600 or 800 level.

Individual research in statistics under supervision.

910. Technical Report. 5 hours. (Max. 10 hours.)

Prerequisite: 40 hours of 600 or 800 level courses.

For use with the professional Master's degree in Applied Mathematical Sciences — Computer Science/Statistics option.

927. Supervised Statistical Consulting I. 3 hours.

Prerequisite: STA 422/622 or equivalent or STA 451/651 or equivalent.

To develop statistical consulting skills ranging from basic concepts relating to how to formulate the exact nature of the client's problem, to solving it and presenting the solution in the language of the client.

928. Supervised Statistical Consulting II. 3-5 hours. (Max. 30 hours.)

To develop advanced statistical consulting skills. (Only six hours of credit may be used toward the master's degree.)

930. Thesis. 1-15 hours.

VETERINARY ANATOMY AND RADIOLOGY (VAR)

John F. Munnell

(Veterinary Medicine Building, South Campus)

Veterinary anatomy is limited at the present time to obtaining the MS degree. The program is available to all qualified students holding professional degrees in the healing arts as well as to graduate students having a strong biological background. Programs of study are available in the general area of microscopic and gross anatomy, embryology, neuroanatomy, electromicroscopy, and radiology. All programs are strongly slanted toward a comparative approach and students are not limited to a particular species for research purposes.

Students interested in comparative anatomical study programs should contact this department directly to determine specific requirements.

603. Veterinary Histology. 5 hours. Two lectures and three 2-hour lab periods per week.

Prerequisite: Permission of department.

A lecture and laboratory course which introduces the student to the microscopic structure and organization of the tissues of domestic animals. Veterinary applications will be emphasized throughout the course.

604. Histology and Embryology of Domestic Animals. 5 hours.

Prerequisite: ZOO 226 or equivalent and two senior division courses in biology.

A combined study sequence of the normal comparative micromorphology of all organs and tissues of domestic animals. Open to advanced students majoring in biology and graduate students.

605. Histology and Embryology of Domestic Animals. 5 hours.

Prerequisite: VAR 404/604.

Continuation of VAR 404/604.

606. Histology and Embryology of Domestic Animals. 5 hours.

Prerequisite: VAR 404/604 and 405/605.

A study of the gross and microscopic anatomy of the nervous system with correlation to function and clinical disorders. A study of the developmental anatomy of domestic animals with emphasis on abnormal development.

607. Neuroanatomy of Domestic Animals. 5 hours.

Prerequisite: VAR 411, 412 or permission of department.

A lecture, laboratory and seminar course of the gross, microscopic and ultrastructural aspects of neuroanatomy presented from a comparative viewpoint using the dog as the basic animal. Open to all qualified graduate or undergraduate students in the biological sciences.

611. Gross Anatomy of the Dog and Cat. 6 hours.

Prerequisite: First year veterinary curriculum or permission of department.

A survey of the gross anatomy of the dog and cat. Detailed dissections of the dog and cat are performed with correlation to the skeleton, radiographic anatomy and palpation of the live animal. Emphasis is placed on the anatomy necessary to understand surgical approaches and clinical diagnosis.

612. Gross Anatomy of Ungulates and Birds. 5 hours. One hour lecture per week and four 3-hour lab periods per week.

Prerequisite: VAR 411/611 or permission of department.

A survey of the gross anatomy of the ungulates, especially the cow and the horse, and of the bird. Gross anatomy is correlated with palpation of the live animal and with radiographic anatomy. Emphasis is placed on the anatomy necessary to understand surgical procedures in clinical diagnosis.

614. Surgical Anatomy of the Canine. 5 hours.

Prerequisite: VAR 411, 412 or equivalent or permission of department.

A combined lecture and laboratory course designed to acquaint the student with practical and functional applications of the gross anatomy involved in surgical procedures on the various organ systems of the body. Open to all qualified graduate or undergraduate students in veterinary medicine.

680. Radiology. 4 hours.

Prerequisite: Permission of department.

A study of the principles of radiology in veterinary medicine, both diagnostic and

therapeutic applications. Roentgen signs will be presented relative to each body system and correlated with pathological changes.

703. (BIO) Electron Microscopy Laboratory. 2 hours.

See BIO 703.

711. Practicum in Teaching Gross Anatomy of the Dog and Cat. 6 hours. (Max. 18 hours.)

Prerequisite: VAR 411/611 or equivalent or permission of department.

Experience in the preparation and presentation of lectures and laboratory instruction on the gross anatomy of the dog and cat. Various methods of presentation of subject matter and student evaluation will be compared and discussed.

712. Practicum in Teaching Gross Anatomy of Ungulates and Birds. 5 hours. (Max. 15 hours.)

Prerequisite: VAR 412/612 or equivalent or permission of department.

Experience in the preparation and presentation of lectures and laboratory instruction on the gross anatomy of ungulates and birds. Various methods of presentation of subject matter and student evaluation will be discussed.

801. Problems in Veterinary Anatomy. 1-5 hours.

Prerequisite: Two senior division courses in biology.

Designed to allow graduate students the opportunity to explore, under supervision, anatomical problems of their choice. These may be in areas of gross or microscopic anatomy. Open to graduate students in the biological sciences meeting the course prerequisites.

803. Advanced Veterinary Histology. 5 hours.

Prerequisite: VAR 404/604, 405/605, or equivalent and permission of department.

A lecture, laboratory and seminar course to acquaint the student with histological variations in the structure of organ systems of domestic animals. Functional aspects based on comparative morphology will be stressed. Open to all qualified graduate students in any area of the biological sciences.

805. Advanced Radiographic Anatomy. 5 hours.

Prerequisite: VAR 480/680 or equivalent.

A series of lectures, discussion seminars and laboratory exercises designed to meet the needs of and encourage the student in the methods and interpretation of special radiographic procedures. These findings are correlated with survey radiography.

810. Fine Structure of Animal Tissues. 5 hours.

Five 1-hour lecture-discussions.

Prerequisite: ZOO 484/684 or equivalent and permission of department.

The contributions of the electron microscope and related techniques to the understanding of tissue fine structure will be presented and discussed. Emphasis will be placed on giving the student a basis for interpretation of electron micrographs in a variety of animal tissues. Cellular and extracellular morphologic specializations will be related to the function of the tissue or organ.

890. Seminar in Veterinary Anatomy. 1 hour.

Prerequisite: Permission of department.

Regular meetings devoted to discussion of current research and topics of interest in the morphologic sciences.

930. Thesis. 1-15 hours.

ZOOLOGY (ZOO)

Gordhan L. Patel

(*Biological Sciences Building, Science Center*)

The Department of Zoology offers MS and PhD degrees. Requirements for the MS include 45 hours of course work: satisfactory performance on written and oral examinations; and an acceptable thesis embodying original research in a specialized area. Requirements for the PhD include a reading knowledge of one foreign language; satisfactory performance on written and oral examinations; and an acceptable dissertation. There are no required number of hours of course work for the doctorate.

Facilities for graduate training include campus laboratories equipped with modern instrumentation for controlled environment studies, electron microscopy, radioisotope studies, animal rooms, greenhouses, and an aquarium room. Available off-campus facilities include the Skidaway Institute of Oceanography, the Marine Institute at Sapelo Island, Savannah River Laboratory of Ecology within the AEC Savannah River Reservation, the Yerkes Primate Center in Atlanta, Georgia, and its field station at Lawrenceville, Georgia. The University's membership in Oak Ridge Associated Universities, the Organization of Tropical Studies and the Highlands Biological Station allows students access to the programs and facilities of these organizations.

602. Protozoology. 5 hours. Three lectures and two double lab periods.

Prerequisite: ZOO 326 or equivalent.

A study of the phylum *Protozoa* with emphasis on morphology, physiology, life histories and the role of protozoa in biological research.

603. Mammalogy. 5 hours. Three lectures and two double lab periods.

Prerequisite: ZOO 326 or equivalent.

A study of the taxonomy, distribution, ecology, and evolution of mammals. (Offered alternate years.)

604. Herpetology. 5 hours. Three lectures and two double lab periods.

Prerequisite: ZOO 326 or equivalent or per-

mission of department.

The evolution, ecology, behavior, structure and physiology of amphibians and reptiles. (Offered alternate years.)

605. Ichthyology. 5 hours. Three lectures and one 4-hour lab.

Prerequisite: ZOO 326 or equivalent.

A study of the taxonomy, distribution, ecology, and evolution of the marine and freshwater fishes of eastern North America.

606. Ornithology. 5 hours. Three lectures and two double lab periods.

Prerequisite: ZOO 326 or equivalent.

An introduction to the study of birds, emphasizing the identification, classification, life histories, and behavior of Georgia species.

607. Invertebrate Zoology I. 5 hours. One lecture and four double lab periods.

Prerequisite: Permission of department.

The morphology, taxonomy, phylogeny and general biology of the acoelomate and pseudocoelomate phyla.

608. Invertebrate Zoology II. 5 hours. One lecture and four double lab periods.

Prerequisite: ZOO 407/607 or permission of department.

The morphology, taxonomy, phylogeny and general biology of the coelomate phyla.

611. (MPG) Cytogenetics. 5 hours.

See MPG 611.

622. Neuroendocrinology. 5 hours. Four lectures and one double lab period.

Prerequisite: BIO 380 or ZOO 327.

The physiology of neural and humoral regulatory mechanisms.

624. Ecological Physiology. 5 hours. Four lectures and one double lab period.

Prerequisite: ZOO 327 or equivalent or permission of department.

The environmental physiology of animals; osmotic and ionic regulation; temperature regulation; gas exchange.

629. Endocrinology. 5 hours.

Prerequisite: ZOO 326 or 327 or permission of department.

A general and comparative study of vertebrate endocrinology and the principles of chemical integration, emphasizing the physiology and evolution of regulatory mechanisms and the molecular bases of hormone action.

631. (FRS) Limnology. 5 hours.

See FRS 631.

653. (GLY) Vertebrate Paleontology. 5 hours.

See GLY 653.

672. Parasitology. 5 hours. Three lectures and two double lab periods.

Prerequisite: ZOO 225.

A comparative study of internal parasites of man and the lower animals.

682. Animal Histological Techniques. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: ZOO 326 (BIO 340 recommended) or permission of department.

Practical considerations of contemporary preparative techniques and their application in different light microscope investigations of cells and tissues.

684. Animal Histology. 5 hours. Two lectures and three double lab periods.

Prerequisite: ZOO 326 or equivalent.

A study of the tissue and their organization into organs and organ systems in animals.

686. Ultrastructure of Cells and Tissues. 5 hours.

Prerequisite: BIO 102, 340, ZOO 336 or equivalent or permission of department.

A review of electron optical methods applicable to facilitating the interpretation of the fine structural organization of prokaryote and eukaryote cells, tissues and selected organs. Emphasis is placed on the study and interpretation of electron micrographs, literature surveys and discussions.

800. Ecological Energetics. 5 hours. Three lectures and one double lab period.

Prerequisite: BIO 350 and one other senior division course in biological science.

A series of lectures designed to explore the principles of energetics as applied to ecological systems.

801. Parasitic Protozoa. 5 hours.

Prerequisite: Permission of department.

Experimental study of the morphology, life histories, classification and parasitic relationships of protozoan parasites of man and the lower animals.

802. Selected Topics in the Biochemistry of Parasites. 5 hours.

Prerequisite: BCH 802 and a course in parasitology, or permission of department.

Comparative aspects of metabolism of parasitic protozoans and helminths including unique biochemical characteristics, rational basis of chemotherapy, biochemistry of parasite vectors and their control.

813. Seminar in Hydrobiology. 1 hour. (Max. 6 hours.)

Prerequisite: Permission of department.

Weekly meetings for discussion of current

research in marine and fresh-water biology and related areas.

815. Freshwater Ecology. 5 hours. Three lectures and one 4-hour lab.

Prerequisite: Permission of department.

Principles of ecology, population biology, and evolution are developed for fresh-water organisms. Laboratories cover basic and up-to-date techniques used in the study of plankton and benthos.

816. Marine Ecology. 5 hours.

Prerequisite: BIO 350 or equivalent, or permission of department.

The ecology of organisms, populations and communities occurring in marine environments.

821. Advanced Physiology. 5 hours.

Prerequisite: ZOO 424/624.

An intensive study, through reading, discussion and laboratory investigation, of special topics in physiology.

824. (PAR) Immunity to Animal Parasites. 5 hours.

See PAR 824.

829. Advanced Endocrinology. 3 hours.

Prerequisite: ZOO 429/629 or equivalent or permission of department.

An advanced study of modern vertebrate endocrinology, emphasizing special topics in research of physiological regulatory mechanisms and the molecular bases for hormone actions.

830. (PAR/PS) Seminar in Parasitology. 1 hour. (Max. 6 hours.)

Prerequisite: Permission of department.

Weekly meeting devoted to discussions of parasitological subjects.

850. Theoretical Ecology. 5 hours.

Prerequisite: Permission of department.

Reading and discussion of theoretical literature in population and community ecology. Lectures as required to provide background and continuity.

855. (BOT) Population Ecology. 5 hours. Two double lectures and one discussion group.

Prerequisite: Permission of department.

Ecological principles with emphasis on population dynamics.

856. Ecology Seminar. 1 hour. (Max. 6 hours.)

Prerequisite: Permission of department.

Weekly meetings covering recent advances in ecology and emphasizing the integration of current ideas and data from plant, animal and microbial research.

857. Pollution Ecology. 3 hours.

Prerequisite: Permission of department.

Problems of environmental pollution from the standpoint of the basic biological sciences with particular emphasis on the ecosystem concept.

858. Systems Ecology I. 5 hours. Two lectures and one single lab period.

Prerequisite: Permission of department.

Design and organization of ecological systems, with digital and analog computer implementation of models. Topic in systems analysis and operations research as applied to ecology.

859. Systems Ecology II. 5 hours. Two lectures and one single lab period.

Prerequisite: ZOO 858.

Design and organization of ecological systems, with digital and analog computer implementation of models. Topics in systems analysis and operations research as applied to ecology.

860. Seminar in Cell Biology. 1 hour.

Prerequisite: Permission of department.

Weekly meetings devoted to discussion of current research in cell biology. A different main theme will be selected for each quarter offered to give emphasis to areas showing especially significant advances.

868. Systems Ecology: Dynamic Analysis I. 5 hours.

Prerequisite: ZOO 859.

Transient response, frequency response, pulse testing and sensitivity analysis; field and laboratory applications.

869. Systems Ecology: Dynamics Analysis II. 5 hours.

Prerequisite: ZOO 868.

System theory of the organism-environment inflation in ecosystems.

900. Problems in Zoology. 1-15 hours.

This course allows students to work intensively on approved problems in certain fields of zoology.

930. Thesis. 1-15 hours.

GRADUATE FACULTY

EX-OFFICIO MEMBERS

Davison, Frederick Corbet, *President of the University and Professor of Veterinary Pathology*
Ph.D., Iowa State

Anderson, Robert Cletus, *Vice President for Research and Professor of Sociology*
Ph.D., New York

Trotter, Virginia Y., *Vice President for Academic Affairs and Professor of Consumer Economics*
Ph.D., Ohio State

Younts, S. Eugene, *Vice President for Services and Professor of Agronomy*
Ph.D., Cornell

Anderson, David P., *Dean of the College of Veterinary Medicine and Professor of Medical Microbiology and Avian Medicine*
Ph.D., Wisconsin

Ansel, Howard Carl, *Dean of the College of Pharmacy and Professor of Pharmacy*
Ph.D., Florida

Beaird, James Ralph, *Dean of the School of Law and University Professor of Law*
L.L.M., George Washington

Dowling, John C., *Dean of the Graduate School and Alumni Foundation Distinguished Professor of Romance Languages*
Ph.D., Wisconsin

Firth, Gerald R., *Acting Dean of the College of Education and Professor of Curriculum and Supervision*
Ed.D., Columbia

Flatt, William P., *Dean and Coordinator of the College of Agriculture and Professor of Animal Science*
Ph.D., Cornell

Hargreaves, Leon A., Jr., *Dean of the School of Forest Resources and Professor of Forest Resources*
Ph.D., Michigan

Morrison, Darrel G., *Dean of the School of Environmental Design and Professor of Landscape Architecture*
M.S.L.A., Wisconsin

Niemi, Albert W., Jr., *Dean of the College of Business Administration and Professor of Economics*
Ph.D., Connecticut

Payne, William Jackson, *Dean of the College of Arts and Sciences and Professor of Microbiology*
Ph.D., Tennessee

Pou, Emily Quinn, *Dean of the College of Home Economics and Professor of Home Economics*
Ph.D., Wisconsin

Russell, John Thomas, *Dean of the School of Journalism and Mass Communication and Professor of Journalism*
Ph.D., Illinois

Stewart, Charles Ashley, *Dean of the School of Social Work and Professor of Social Work*
Ph.D., Florida State

APPOINTED MEMBERS

Aaron, Ira Edward, *Alumni Foundation Distinguished Professor of Reading Education*
Ph.D., Minnesota

Aaron, Robert L., *Associate Professor of Reading Education*
Ed.D., Georgia

Adams, Henry Earl, *Research Professor of Psychology*
Ph.D., Louisiana State

Adomian, George, *David C. Barrow Professor of Mathematics and Director of the Center for Applied Mathematics*
Ph.D., California (Los Angeles)

Agee, Warren K., *Professor of Journalism*
Ph.D., Minnesota

Agee, William Hugh, *Associate Professor of Language Education*
Ph.D., Florida State

Agosin, Moises, *Research Professor of Zoology*
M.D., Chile

- Aguar, Charles E., *Professor of Environmental Design*
M.S., Illinois-Urbana
- Akin, Danny Earl, *Adjunct Research Associate of Agronomy*
Ph.D., Georgia
- Algeo, John T., *Professor of English*
Ph.D., Florida
- All, John N., *Professor of Entomology*
Ph.D., Wisconsin
- Allard, Gilles O., *Professor of Geology*
Ph.D., Johns Hopkins
- Allen, Joseph D., III, *Professor of Psychology*
Ph.D., Southern Illinois
- Allinger, Norman L., *Research Professor of Chemistry*
Ph.D., California (Los Angeles)
- Allsbrook, Ogden O., Jr., *Associate Professor of Economics*
Ph.D., Virginia
- Alvermann, Donna Elaine, *Assistant Professor of Reading Education*
Ph.D., Syracuse
- Ames, Glenn C. W., *Associate Professor of Agricultural Economics*
Ph.D., Tennessee
- Amos, Henry E., *Associate Professor of Animal and Dairy Science*
Ph.D., Kentucky
- Anderson, James C., Jr., *Assistant Professor of Classics*
Ph.D., North Carolina
- Anderson, James L., *Assistant Professor of Chemistry*
Ph.D., Wisconsin
- Anderson, Richard J., *Professor of Social Work and Associate Dean of the School of Social Work*
Ed.D., Illinois State
- Anderson, Robert L., *Professor of Physics and Head of the Department of Physics and Astronomy*
Ph.D., Wayne State
- Anderson, Wyatt W., *Professor of Molecular and Population Genetics and Head of the Department of Molecular and Population Genetics*
Ph.D., Rockefeller
- Antenen, Wayne W., *Professor of Counselor Education and Acting Associate to the Dean for Faculty Personnel of the College of Education*
Ph.D., Illinois
- Armstrong, Ronald D., *Associate Professor of Quantitative Business Analysis*
Ph.D., Massachusetts
- Ashley, Doyle A., *Professor of Agronomy*
Ph.D., North Carolina State
- Asmussen, Marjorie, *Assistant Professor of Molecular and Population Genetics and Mathematics*
Ph.D., Stanford
- Atyeo, Warren Thomas, *Professor of Entomology*
Ph.D., Kansas
- Avisé, John C., *Associate Professor of Molecular and Population Genetics*
Ph.D., California (Davis)
- Azoff, Edward A., *Associate Professor of Mathematics*
Ph.D., Michigan
- Bacon, Charles W., *Adjunct Assistant Professor of Plant Pathology*
Ph.D., Michigan
- Bailey, Robert L., *Associate Professor of Forest Resources*
Ph.D., Georgia
- Baine, Rodney Montgomery, *Franklin Professor of English*
Ph.D., Harvard
- Baker, Francis Todd, *Associate Professor of Physics*
Ph.D., Michigan
- Baldwin, Jack N., *Professor of Microbiology*
Ph.D., Purdue
- Balkwell, James W., *Associate Professor of Sociology*
Ph.D., Michigan State
- Ball, Billy J., *Professor of Mathematics*
Ph.D., Texas
- Banks, Philip Alan, *Assistant Professor of Agronomy*
Ph.D., Texas A & M
- Bargmann, Rolf, *General Sandy Beaver Teaching Professor of Statistics and Computer Science*
Ph.D., North Carolina
- Barksdale, Hiram Collier, *Professor of Marketing*
Ph.D., New York
- Barrack, John B., *Associate Professor of Accounting*
Ph.D., Oklahoma State
- Barry, John Reagan, *Professor of Psychology*
Ph.D., Ohio State

- Barstow, William E., *General Sandy Beaver Teaching Associate Professor of Botany and Zoology*
Ph.D., Purdue
- Bartley, Numan V., *Professor of History*
Ph.D., Vanderbilt
- Bass, Max H., *Professor of Entomology and Head of the Department of Entomology and Fisheries, Coastal Plain Experiment Station, Tifton*
Ph.D., Auburn
- Bates, Frederick Leroy, *Professor of Sociology*
Ph.D., North Carolina
- Baumgartner, Ted A., *Professor of Health, Physical Education, and Recreation*
Ph.D., Iowa
- Beck, Elwood M., Jr., *Associate Professor of Sociology*
Ph.D., Tennessee
- Belknap, Michal R., *Assistant Professor of History*
Ph.D., Wisconsin
- Bell, Durham K., *Associate Professor of Plant Pathology, Coastal Plain Experiment Station, Tifton*
Ph.D., North Carolina State
- Bellman, Richard E., *Temporary Part-time Professor of Applied Mathematics*
Ph.D., Princeton
- Below, Eckhardt H. A., *Professor of Environmental Design*
B.L.A., University of Berlin
- Benyshek, Larry Lee, *Associate Professor of Animal and Dairy Science*
Ph.D., V.P.I.
- Beranek, William, *Mills Bee Lane and Georgia Bankers' Association Professor of Banking and Finance*
Ph.D., California (Los Angeles)
- Berdanier, Carolyn D., *Professor of Foods and Nutrition and Animal and Dairy Science*
Ph.D., Rutgers
- Berentsen, William M., *Associate Professor of Geography*
Ph.D., Ohio State
- Berisford, Charles Wayne, *Professor of Entomology*
Ph.D., Virginia Polytechnic Institute
- Bernstein, Irwin S., *Professor of Psychology*
Ph.D., Chicago
- Berrigan, Joseph Richard, Jr., *General Sandy Beaver Teaching Professor of History*
Ph.D., Tulane
- Bertsch, Gary K., *General Sandy Beaver Teaching Professor of Political Science*
Ph.D., Oregon
- Beth, Loren P., *Professor of Political Science*
Ph.D., Chicago
- Beuchat, Larry Ray, *Professor of Food Science, Georgia Experiment Station, Griffin*
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- Billard, Lynne, *Professor of Statistics and Computer Science and Head of the Department of Statistics and Computer Science*
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- Bishop, Robert L., *Professor of Journalism and Mass Communication*
Ph.D., Wisconsin
- Black, Clanton C., Jr., *Research Professor of Biochemistry*
Ph.D., Florida
- Blackstone, John H., Jr., *Associate Professor of Management*
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- Blanton, C. DeWitt, Jr., *Professor of Medicinal Chemistry*
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- Blount, Ben G., *Professor of Anthropology and Head of the Department of Anthropology*
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- Blue, C. Milton, *Professor of Speech Pathology and Audiology*
Ph.D., George Peabody
- Blum, Murray Sheldon, *Research Professor of Entomology*
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- Boerma, H. Roger, *Associate Professor of Agronomy*
Ph.D., Illinois
- Bogue, Ronald L., *Associate Professor of Comparative Literature*
Ph.D., Oregon
- Boney, Francis N., *Professor of History*
Ph.D., Virginia
- Bonham, Sharon Price, *Associate Professor of Child and Family Development and Sociology*
Ph.D., Iowa State

- Bonney, Warren Chester, *Professor of Counselor Education*
Ph.D., Texas
- Booth, Nicholas H., *Professor of Physiology and Pharmacology*
Ph.D., Colorado
- Boswell, Fred Carlen, *Professor of Agronomy, Georgia Experiment Station, Griffin*
Ph.D., Pennsylvania State
- Bouldin, Richard H., *Professor of Mathematics*
Ph.D., Virginia
- Boulton, William R., *Associate Professor of Management and Academic Coordinator of Graduate Studies of the College of Business Administration*
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- Bouton, Joseph H., *Associate Professor of Agronomy*
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- Bowen, John Metcalf, *Professor of Physiology and Pharmacology and Associate Dean for Research and Graduate Affairs, College of Veterinary Medicine and Director of the Veterinary Medical Experiment Station*
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- Box, Elgene O., *Assistant Professor of Geography*
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- Bozarth, Jerold D., *Professor of Counselor Education*
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- Brackett, Benjamin G., *Professor of Physiology and Pharmacology and Head of the Department of Physiology and Pharmacology*
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- Bradley, Ralph Allen, *Research Professor of Statistics and Computer Science*
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- Brady, Ullman Eugene, Jr., *Professor of Entomology*
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- Brannigan, Michael, *Associate Professor of Statistics and Computer Science*
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- Braucher, Charles Landis, *Professor of Pharmacy Administration*
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- Brewer, John Michael, *Associate Professor of Biochemistry*
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- Brisbin, I. Lehr, Jr., *Adjunct Associate Professor of Poultry Science and Associate Research Scientist in ERDA Savannah River Ecology Laboratory*
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- Britton, Bruce K., *Associate Professor of Psychology*
Ph.D., Iowa
- Britton, Walter M., *Associate Professor of Poultry Science*
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- Broder, Josef Meinard, *Associate Professor of Agricultural Economics*
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- Brody, Gene H., *Associate Professor of Child and Family Development*
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- Brook, George A., *Associate Professor of Geography*
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- Brown, Carvin L., *Associate Professor of Educational Administration*
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- Brown, Claud Lafayette, *Alumni Foundation Distinguished Professor of Forest Resources*
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- Brown, Ernest Evan, *Professor of Agricultural Economics*
Ph.D., Florida
- Brown, John, *Professor of Medical Microbiology*
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- Brown, Ronald Harold, *Professor of Agronomy*
Ph.D., Virginia Tech
- Brown, Sidney E., *Associate Professor of Educational Administration and Associate Vice President for Academic Affairs-Administration*
Ed.D., Georgia
- Bruch, Catherine B., *Professor of Educational Psychology*
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- Bruckner, James V., *Associate Professor of Pharmacology and Toxicology*
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- Bryan, John H. D., *Professor of Zoology*
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- Buck, James Harold, *Professor of History and Associate Vice President of Academic Affairs-Special Projects*
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- Bullock, Charles S., III, *Richard Brevard Russell Professor of Political Science*
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- Bunce, Opal Rebecca Wheeler, *Associate Professor of Pharmacology and Toxicology*
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- Bundschuh, Ernest L., *Professor of Physical Education and Mental Retardation*
Ph.D., Maryland
- Bunnell, Bradford N., *Professor of Psychology*
Ph.D., Carnegie-Mellon
- Burke, William H., *Professor of Poultry Science*
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- Burkhard, Donald G., *Professor of Physics*
Ph.D., Michigan
- Burton, Glenn Willard, *Alumni Foundation Distinguished Professor of Agronomy, Principal Geneticist, Coastal Plain Experiment Station, Tifton, U.S.D.A.*
Ph.D., Rutgers
- Burton, Thomas A., *Associate Professor of Exceptional Children*
Ed.D., Kentucky
- Bush, Parshall B., *Associate Professor of Poultry Science, Cooperative Extension Service*
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- Butts, David P., *Professor of Science Education and Acting Associate to the Dean for Computer Operations of the College of Education*
Ph.D., Illinois
- Cadwallader, Donald Elton, *Professor of Pharmaceutics and Head of the Department of Pharmaceutics*
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- Calhoun, Catharine Blue, *Associate Professor of English*
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- Calhoun, James F., *Associate Professor of Psychology*
Ph.D., Illinois
- Calhoun, Karen S., *Professor of Psychology*
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- Campbell, Bruce A., *Associate Professor of Political Science*
Ph.D., Michigan
- Campbell, James E., *Assistant Professor of Political Science*
Ph.D., Syracuse
- Campbell, Richard W., *Assistant Professor of Political Science*
Ph.D., Syracuse
- Campion, Dennis R., *Adjunct Associate Professor of Food Science*
Ph.D., Wisconsin
- Canfield, Earl R., Jr., *Associate Professor of Statistics and Computer Science*
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- Canolty, Nancy L., *Associate Professor of Foods and Nutrition*
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- Capie, William R., Jr., *Professor of Science Education*
Ed.D., Houston
- Capomacchia, Anthony C., *Associate Professor of Pharmaceutics*
Ph.D., Florida
- Carlson, Jon F., *Professor of Mathematics*
Ph.D., Virginia
- Carlton, Bruce C., *Professor of Molecular and Population Genetics*
Ph.D., Michigan State
- Carpenter, John A., *Professor of Food Science and Animal Science*
Ph.D., Georgia
- Carreira, Lionel Andrade, *Associate Professor of Chemistry*
Ph.D., Massachusetts Institute of Technology
- Carroll, Archie B., III, *Professor of Management*
D.B.A., Florida State
- Carter, Lief H., *Associate Professor of Political Science*
Ph.D., California (Berkeley)
- Carvajal, Christa L., *Assistant Professor of Drama*
Ph.D., Texas
- Carver, Robert E., *Professor of Geology*
Ph.D., Missouri
- Case, Mary E., *Associate Professor of Molecular and Population Genetics*
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- Caster, William Oviatt, *Professor of Nutrition*
Ph.D., Minnesota
- Chalfant, Richard B., *Professor of Entomology, Coastal Plain Experiment Station, Tifton*
Ph.D., Wisconsin
- Chapman, Willie L., Jr., *Professor of Pathology*
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- Chen, Chia-Ming, *Senior Research Scientist and Adjunct Associate Professor of Forest Resources*
Ph.D., Tokyo
- Chen, Hubert J., *Associate Professor of Statistics*
Ph.D., Rochester
- Cheney, Paul H., *Associate Professor of Management*
Ph.D., Minnesota
- Chesness, Jerry Lee, *Professor of Agricultural Engineering*
Ph.D., Michigan State
- Chhinnan, Mangeet Singh, *Assistant Professor of Food Science, Georgia Experiment Station, Griffin*
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- Chittick, William O., *Associate Professor of Political Science and Lecturer in Military Science*
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- Chou, Tsu-Teh, *Associate Professor of Physics*
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- Ciordia, Honorico, *Adjunct Research Associate in Parasitology, Georgia Experiment Station, Griffin*
Ph.D., Tennessee
- Clancey, Kevin F., *Professor of Mathematics*
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- Clark, Douglas Napier, *Professor of Mathematics*
Ph.D., Johns Hopkins
- Clark, Rex Lee, *Associate Professor of Agricultural Engineering*
Ph.D., Mississippi State
- Clarke, Bowman Lafayette, *Professor of Philosophy*
Ph.D., Emory
- Clegg, Michael T., *Professor of Botany and Molecular and Population Genetics*
Ph.D., California (Davis)
- Clements, Robert Donald, *Professor of Art*
Ph.D., Pennsylvania State
- Clifton, Ivery D., *Associate Professor of Agricultural Economics*
Ph.D., Illinois
- Clute, Robert Eugene, *General Sandy Beaver Teaching Professor of Political Science and Chairman of the Division of Social Sciences*
Ph.D., Duke
- Cocca, Maria, *Associate Professor of Romance Languages*
Ph.D., California (Riverside)
- Colvert, James B., *General Sandy Beaver Teaching Professor of English*
Ph.D., Louisiana State
- Compton, Mary F., *Associate Professor of Curriculum and Supervision*
Ed.D., Florida
- Cooney, Thomas J., *Professor of Mathematics Education*
Ph.D., Illinois
- Cooper, Charles Dewey, *Professor of Physics*
Ph.D., Duke
- Cooper, James W., Jr., *Professor of Pharmacy Practice and Head of the Department of Pharmacy Practice*
Ph.D., Georgia
- Cooper, Thomas C., *Associate Professor of Germanic and Slavic Languages and Language Education*
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- Corina, John, *Professor of Music*
D.M., Florida State
- Cosgrove, William Burnham, *Alumni Foundation Distinguished Professor of Zoology*
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- Coulter, Dwight B., *Professor of Physiology and Pharmacology*
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- Courtenay, Bradley C., *Assistant Professor of Adult Education*
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- Couvillon, Gary A., *Professor of Horticulture*
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- Cox, James F., III, *Associate Professor of Management*
Ph.D., Clemson
- Craige, Betty Jean, *Associate Professor of Comparative Literature*
Ph.D., Washington
- Crask, Melvin R., *Associate Professor of Marketing and Distribution*
D.B.A., Indiana
- Crawford, James M., Jr., *Professor of Anthropology*
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- Crim, Joe W., *Assistant Professor of Zoology*
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- Crisler, Jack R., *Professor of Counselor Education*
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- Cross, Aleene Ann, *Professor of Home Economics Education*
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- Crossley, Deryee A., Jr., *Professor of Entomology*
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- Crowe, Charles R., *Professor of History*
Ph.D., Brown
- Crowell, Wayne A., *Professor of Pathology*
Ph.D., Georgia
- Cunfer, Barry M., *Associate Professor of Plant Pathology, Georgia Experiment Station, Griffin*
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- Cureton, Kirk J., *Associate Professor of Health and Physical Education*
Ph.D., Illinois
- Curtis, Robert Irvin, *Assistant Professor of Classics*
Ph.D., Maryland
- Curtis, Warren Scott, *Professor of Speech Pathology and Audiology*
Ph.D., Purdue
- Dailey, Harry Alva, Jr., *Assistant Professor of Microbiology*
Ph.D., U.C.L.A.
- Dallmeyer, R., David, *Associate Professor of Geology*
Ph.D., S.U.N.Y.
- Damian, Raymond T., *Professor of Zoology*
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- Daniell, Jeff Walter, *Associate Professor of Horticulture, Georgia Experiment Station, Griffin*
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- Danielsen, Albert Leroy, *Professor of Economics*
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- Darley, W. Marshall, *Associate Professor of Botany*
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- Dauenhauer, Bernard P., *General Sandy Beaver Teaching Professor of Philosophy*
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- Davis, Earl Fred, *Professor of Accounting*
Ph.D., Alabama
- Davis, James Herbert, Jr., *Associate Professor of French*
Ph.D., North Carolina
- Davis, Kenneth Roscoe, *Professor of Quantitative Business Analysis and Head of the Department of Quantitative Business Analysis*
Ph.D., North Texas State
- Davis, Richard B., *Professor of Avian Medicine and Medical Microbiology*
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- Davis, Robert, *Adjunct Associate Professor of Entomology*
Ph.D., Georgia
- Davis, William D., *Assistant Professor of Music*
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- Dawe, Donald L., *Professor of Medical Microbiology*
Ph.D., Illinois
- DeGorog, Ralph Paul, *Professor of Romance Philology*
Ph.D., Columbia
- De Haseth, James A., *Assistant Professor of Chemistry*
Ph.D., North Carolina
- DeLorme, Charles D., Jr., *Professor of Economics*
Ph.D., Louisiana State
- Del Rey, Patricia, *Associate Professor of Health, Physical Education, and Recreation*
Ed.D., Columbia
- Demski, James W., *Associate Professor of Plant Pathology, Georgia Experiment Station, Griffin*
Ph.D., Pennsylvania State
- DerVartanian, Daniel V., *Professor of Biochemistry*
Ph.D., Amsterdam
- DeSa, Richard J., *Adjunct Associate Professor of Biochemistry*
Ph.D., Illinois
- DeVorse, Louis, Jr., *Professor of Geography*
Ph.D., London (England)
- Dietz, Alfred, *Professor of Entomology*
Ph.D., Minnesota
- Dince, Robert R., *Professor of Banking and Finance*
Ph.D., Cornell
- Dinnan, James A., *Professor of Adult Education*
Ph.D., Fordham
- Dirr, Michael A., *Associate Professor of Horticulture*
Ph.D., Massachusetts
- Dominick, Joseph R., Jr., *Professor of Journalism*
Ph.D., Michigan State
- Dowd, James J., *Associate Professor of Sociology*
Ph.D., Southern California

- Dowling, John Clarkson, *Alumni Foundation Distinguished Professor of Romance Languages and Dean of the Graduate School*
Ph.D., Wisconsin
- Downen, Thomas W., *Associate Professor of Educational Media and Librarianship*
Ph.D., Florida State
- Doyle, Charles Clay, *Associate Professor of English*
Ph.D., Texas
- Dress, Peter Edward, *Professor of Forest Resources*
Ph.D., Purdue
- Duncan, James Robert, *Professor of Veterinary Pathology and Head of the Department of Veterinary Pathology*
Ph.D., Iowa State
- Duncan, Marion Mahan, Jr., *Professor of Physics and Chairman of the Division of Physical Sciences*
Ph.D., Duke
- Duncan, Ronny Rush, *Associate Professor of Agronomy, Georgia Experiment Station, Griffin*
Ph.D., Texas A & M
- Dunn, Delmer D., *Regents' Professor of Political Science*
Ph.D., Wisconsin
- Dyer, Thomas G., *Assistant Professor of Higher Education*
Ph.D., Georgia
- Eagon, Robert Garfield, *Professor of Microbiology*
Ph.D., Ohio State
- Eberhard, Wallace B., *Associate Professor of Journalism*
Ph.D., Wisconsin
- Edmonston, Paul, *General Sandy Beaver Teaching Professor of Art*
Ph.D., Ohio State
- Edwards, Alan K., *Associate Professor of Physics*
Ph.D., Nebraska
- Edwards, Charles Henry, Jr., *Professor of Mathematics*
Ph.D., Tennessee
- Edwards, David A., *Associate Professor of Mathematics*
Ph.D., Columbia
- Edwards, Hardy Malcolm, Jr., *Professor of Poultry Science and Animal Nutrition*
Ph.D., Cornell
- Edwards, James Don, J.M. *Tull Professor of Accounting*
Ph.D., Texas
- Eidsvik, Charles V., *Associate Professor of Drama*
Ph.D., Illinois
- Eisele, James Edward, *Professor of Curriculum and Supervision*
Ed.D., New York
- Eitenmiller, Ronald R., *Professor of Food Science*
Ph.D., Nebraska
- Ellis, Robert A., *Franklin Professor of Sociology*
Ph.D., Yale
- Ellis, William G., Jr., *Associate Professor of Language Education*
Ed.D., Virginia
- Endsley, Richard C., *Professor of Child Development and Psychology*
Ph.D., Iowa
- Enggass, Robert, *Fuller E. Callaway Professor of Art*
Ph.D., Michigan
- English, John Wesley, *Associate Professor of Journalism*
Ph.D., Union Graduate School
- Ennulat, Egbert M., *Professor of Music*
Ph.D., Western Reserve
- Epperson, James E., *Associate Professor of Agricultural Economics, Georgia Experiment Station, Griffin*
Ph.D., Mississippi State
- Estep, Daniel Q., *Associate Professor of Psychology*
Ph.D., Florida
- Evans, Donald L., *Associate Professor of Medical Microbiology*
Ph.D., Arkansas
- Farrell, Robert L., *Professor of Veterinary Pathology*
Ph.D., Ohio State
- Feldman, Edmund Burke, *Alumni Foundation Distinguished Professor of Art*
Ed.D., Columbia
- Ferguson, Bruce K., *Assistant Professor of Landscape Architecture*
M.L.A., Pennsylvania
- Ferré, Frederick, *Professor of Philosophy and Head of the Department of Philosophy*
Ph.D., St. Andrews

- Field, Timothy F., *Professor of Counselor Education*
Ph.D., Maryland
- Fincher, Cameron L., *Regents' Professor of Higher Education and Psychology and Director of the Institute of Higher Education*
Ph.D., Ohio State
- Fincio, Delmar R., *Professor of Physiology and Pharmacology*
Ph.D., Minnesota
- Finn, Robert H., *Professor of Management*
Ph.D., Purdue
- Finnerty, William R., *Professor of Microbiology and Head of the Department of Microbiology*
Ph.D., Iowa State
- Firth, Gerald R., *Professor of Curriculum and Supervision and Acting Dean of the College of Education*
Ed.D., Columbia
- Firth, Ian James Willis, *Associate Professor of Environmental Design*
M.L.A., Edinburgh
- Fisher, Carol Jean, *Associate Professor of Language Education*
Ph.D., Ohio State
- Fisher, James S., *Associate Professor of Geography*
Ph.D., Georgia
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- Munnell, John F., *Associate Professor of Anatomy and Radiology and Head of the Department of Anatomy and Radiology*
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- Murphy, Arthur D., *Assistant Professor of Anthropology*
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- Myers, Martha A., *Assistant Professor of Sociology*
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- Nasisse, Andy S., *Associate Professor of Art*
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- Neathery, Milton W., *Associate Professor of Dairy Science*
Ph.D., Georgia
- Nelson, Stuart O., *Adjunct Professor of Agricultural Engineering*
Ph.D., Iowa State
- Neter, John, *Professor of Management Sciences and Statistics*
Ph.D., Columbia
- Newfield, John W., *Associate Professor of Curriculum and Supervision*
Ed.D., New Mexico
- Newton, Melvin Gary, *Associate Professor of Chemistry*
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- Nice, David Charles, *Assistant Professor of Political Science*
Ph.D., Michigan
- Nicolai, Ralf Rochus, *Professor of Germanic and Slavic Languages*
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- Niemi, Albert W., Jr., *Professor of Economics and Dean of the College of Business Administration*
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- Nix, Walter Robert, *General Sandy Beaver Teaching Associate Professor of Art*
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- Noakes, John E., *Professor of Geology and Anthropology and Director of Center for Applied Isotope Studies*
Ph.D., Texas A & M
- Noble, Clyde Everett, *Professor of Psychology*
Ph.D., Iowa
- Noffke, Gary Lee, *Associate Professor of Art*
M.F.A., Southern Illinois
- Nolan, John D., *Associate Professor of Educational Psychology*
Ph.D., Harvard
- Norred, William P., III, *Adjunct Assistant Professor of Pharmacology*
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Ph.D., Emory
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Ph.D., George Peabody
- Odum, Eugene P., *Fuller E. Callaway Professor of Ecology, Alumni Foundation Distinguished Professor of Zoology and Director of the Institute of Ecology*
Ph.D., Illinois
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- Okey, James R., *Professor of Science Education*
Ph.D., Florida State
- Olien, Michael D., *Associate Professor of Anthropology*
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- Oliva, Peter F., *Adjunct Professor in Cooperative Education Program*
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- Orthner, Dennis K., *Professor of Child and Family Development*
Ph.D., Florida State
- Osborn, Donald Keith, *Professor of Elementary Education*
Ph.D., Wayne State
- Owens, William A., Jr., *University Professor, Professor of Psychology, and Director of the Institute for Behavioral Research*
Ph.D., Minnesota
- Padilla, Michael J., *Associate Professor of Science Education*
Ph.D., Michigan State
- Paffenhofer, Gustav-Adolph, *Adjunct Associate Professor of Zoology*
Ph.D., Justus-Liebig-Universität, Germany
- Page, Richard C., *Associate Professor of Counselor Education*
Ph.D., Florida
- Palevitz, Barry A., *Associate Professor of Botany*
Ph.D., Wisconsin
- Pallas, James Edward, Jr., *Adjunct Associate Professor of Horticulture*
Ph.D., California (Davis)
- Pannell, Clifton W., *Professor of Geography*
Ph.D., Chicago
- Papa, Kenneth E., *Professor of Plant Genetics*
Ph.D., Cornell
- Park, Han-Shik, *Associate Professor of Political Science*
Ph.D., Minnesota
- Parker, Albert John, *Assistant Professor of Geography*
Ph.D., Wisconsin
- Patel, Gordhan L., *Professor of Zoology and Biochemistry and Head of the Department of Zoology*
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- Patten, Bernard Clarence, *Professor of Zoology*
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- Pavlik, William B., *Professor of Psychology and Head of the Department of Psychology*
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- Perkins, Edward A., Jr., *Professor of Business Education*
Ed.D., Oregon State
- Perkins, Henry Frank, *Professor of Agronomy*
Ph.D., Rutgers
- Pesti, Gene Michael, *Assistant Professor of Poultry Science*
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- Peters, Charles R., *Assistant Professor of Anthropology*
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- Pfeiffer, Isobel L., *Adjunct Professor in Cooperative Education Program*
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- Piriou, Jean-Pierre, *Professor of Romance Languages and Head of the Department of Romance Languages*
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- Pittie, Harsh V., *Associate Professor of Mathematics*
Ph.D., Princeton
- Placek, Robert Walter, *Associate Professor of Music*
Ed.D., Illinois
- Pokorny, Franklin A., *Professor of Horticulture*
Ph.D., Illinois
- Polansky, Norman Alburt, *Regents' Professor of Social Work*
Ph.D., Michigan
- Pollack, Robert H., *Professor of Psychology*
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- Pomerance, Carl B., *Professor of Mathematics*
Ph.D., Harvard
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Ph.D., Washington
- Porter, James W., *Associate Professor of Zoology*
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Ph.D., Yale
- Postlewait, Thomas E., *Assistant Professor of Drama*
Ph.D., Minnesota
- Powell, Evan R., *Associate Professor of Educational Psychology*
Ed.D., Temple
- Powell, Jack V., *Associate Professor of Elementary Education*
Ph.D., Florida State
- Power, William L., *Associate Professor of Religion*
Ph.D., Emory
- Powers, John Joseph, *Terrell Distinguished Professor of Food Science*
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- Prasse, Keith William, *Professor of Pathology*
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- Pratt, Lee H., *Professor of Botany*
Ph.D., Oregon State
- Prestwood, Annie Katherine, *Professor of Parasitology*
Ph.D., Georgia
- Price, James Clarence, *Associate Professor of Pharmaceutics*
Ph.D., Rhode Island
- Proenza, Luis M., *Associate Professor of Zoology*
Ph.D., Minnesota
- Provost, Ernest E., *Professor of Zoology and Wildlife Management*
Ph.D., Washington State
- Ragland, William L., III, *Professor of Avian Medicine, Pathology and Medical Microbiology*
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- Rampacek, George B., *Associate Professor of Animal Science*
Ph.D., North Carolina State
- Rao, V. N. Mohan, *Associate Professor of Food Science*
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- Ratnayaka, Shanta, *Associate Professor of Religion*
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- Reagan, James O., *Associate Professor of Food Science*
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- Reid, Leonard N., *Associate Professor of Journalism*
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- Reigle, Thomas G., *Associate Professor of Pharmacology*
Ph.D., Ohio State
- Reinert, Robert E., *Associate Professor of Forest Resources*
Ph.D., Michigan
- Reisman, Fredericka K., *Professor of Elementary Education*
Ph.D., Syracuse
- Reynolds, Fred D., *Professor of Marketing and Distribution and Head of the Department of Marketing and Distribution*
Ph.D., Alabama
- Rice, James Thomas, *Associate Professor of Forest Resources*
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- Rice, Marion Jennings, *Professor of Social Science Education*
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- Rice, Peter M., *Associate Professor of Mathematics*
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- Rich, Mark, *Professor of Geology*
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- Richardson, Deborah R., *Assistant Professor of Psychology*
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- Richmond, Bert O., *Professor of Counselor Education*
Ed.D., Indiana
- Ricker, Kenneth S., *Professor of Science Education*
Ed.D., Maryland
- Riley, Joseph P., *Associate Professor of Science Education*
Ph.D., Colorado
- Rives, John E., *Professor of Physics*
Ph.D., Duke
- Roberson, Edward L., *Professor of Parasitology*
Ph.D., Georgia
- Robinson, Ira E., *Associate Professor of Sociology*
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- Roemmich, Roger A., *Associate Professor of Accounting*
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- Rogers, L. B., *Graham Perdue Professor of Chemistry and Acting Head of the Department of Chemistry*
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- Rosen, Sidney, *Professor of Psychology*
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- Rosenbaum, Arthur S., *Associate Professor of Art*
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- Roth, Ivan L., *Professor of Microbiology*
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Ed.D., George Peabody
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- Schmidt, Gregory W., *Assistant Professor of Botany*
Ph.D., S.U.N.Y. (Stony Brook)
- Schneider, Donald O., *Associate Professor of Social Science Education*
Ph.D., George Peabody
- Schnittjer, Carl J., *Associate Professor of Educational Administration*
Ph.D., Iowa
- Schwartz, Barry, *Professor of Sociology*
Ph.D., Pennsylvania
- Scott, Alan, *Professor of Physics*
Ph.D., London
- Scott, Curtis Paul, *Associate Professor of Vocational Education and Chairman of the Division of Vocational Education*
Ph.D., Georgia State
- Seaton, Harold W., *Associate Professor of Reading Education*
Ed.D., Missouri
- Seerley, Robert Wayne, *Professor of Animal Science*
Ph.D., Michigan State
- Selby, Edward B., Jr., *Associate Professor of Banking and Finance*
Ph.D., Louisiana State
- Shaffer, David R., *Professor of Psychology*
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- Sharitz, Rebecca R., *Associate Research Scientist, SREL and Adjunct Associate Professor of Botany*
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- Shaw, James Scott, *Associate Professor of Astronomy*
Ph.D., Pennsylvania
- Shedd, Peter Jay, *Associate Professor of Real Estate and Legal Studies*
J.D., Georgia
- Shenkel, William Monroe, *Professor of Real Estate and Legal Studies*
Ph.D., Washington
- Shotick, Andrew L., *Associate Professor of Special Education*
Ph.D., Syracuse
- Shotts, Emmett B., Jr., *Professor of Medical Microbiology*
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- Shrum, John W., *Professor of Science Education*
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- Siegel, Herbert S., *Adjunct Associate Professor and Research Physiologist*
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- Simons, Gene M., *Professor of Music*
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- Spalding, B. Phinizy, *Associate Professor of History*
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- Sparks, Darrell, *Professor of Horticulture*
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- Spencer, Warren F., *Professor of History*
Ph.D., Pennsylvania
- Srivastava, Prakash N., *Professor of Biochemistry*
Ph.D., Cambridge
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- Steuer, Ralph E., *Associate Professor of Quantitative Business Analysis*
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- Stoneman, Zolinda, *Associate Professor of Child and Family Development*
Ph.D., George Peabody
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- Strobel, George L., *Associate Professor of Physics*
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- Sumner, Malcolm Edward, *Professor of Agronomy*
Ph.D., Oxford
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- Sweeney, John Gordon, III, *Assistant Professor of English*
Ph.D., California
- Tackett, Randall L., *Assistant Professor of Pharmacology and Toxicology*
Ph.D., Georgia
- Talarico, Susetta, *Associate Professor of Political Science*
Ph.D., Connecticut
- Talbott, Richard E., *Associate Professor of Speech Pathology and Audiology*
Ph.D., Oklahoma

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- Travis, James, *Professor of Biochemistry*
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- Trieschmann, James Shipp, *Professor of Risk Management and Insurance and Head of the Department of Risk Management and Insurance*
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- Tyler, David Earl, *Professor of Veterinary Pathology*
Ph.D., Iowa State
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Ph.D., Eber Karl U Tubingen
- Ulmer, Roland Curtis, Sr., *Professor of Adult Education*
Ed.D., Florida State
- Umansky, Warren, *Associate Professor in Program for Exceptional Children*
Ph.D., Indiana
- Unger, Richard L., *Associate Professor of Comparative Literature*
Ph.D., Cornell
- Utley, Philip R., *Professor of Animal Science, Coastal Plain Experiment Station, Tifton*
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- Uzes, Charles A., *Associate Professor of Physics*
Ph.D., California (Riverside)
- Valis, Noel M., *Associate Professor of Spanish and French*
Ph.D., Bryn Mawr
- Vallner, Joseph J., *Associate Professor of Pharmaceutics*
Ph.D., Wisconsin
- Van den Avyle, Michael J., *Adjunct Assistant Professor of Forest Resources*
Ph.D., Texas A & M
- Vance, John A., *Assistant Professor of English*
Ph.D., Florida State
- VanEseltine, William Parker, *Professor of Medical Microbiology*
Ph.D., Cornell
- Van Keuren, Frances, *Assistant Professor of Art*
Ph.D., Brown

- VanSickle, Ronald L., *Associate Professor of Social Science Education*
Ed.D., Indiana
- Vapnek, Daniel, *Adjunct Professor of Molecular and Population Genetics*
Ph.D., Miami
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Ph.D., Georgia
- Vines, Herbert, *Professor of Horticulture*
Ph.D., California (Los Angeles)
- Vipperman, Carl Jackson, *Associate Professor of History*
Ph.D., Virginia
- Vogel, Roger Craig, *Associate Professor of Music*
Ph.D., Ohio State
- Von Glasersfeld, Ernst C., *Professor of Psychology*
Sci. Bacc, Zuoz
- Vorpahl, Ben M., *Associate Professor of English*
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- Wallace, James B., *Professor of Entomology*
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- Waln, Ronald L., *Professor of Music*
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- Walters, James C., *Professor of Child and Family Development*
Ph.D., Florida State
- Walters, Lynda M., *Assistant Professor of Child and Family Development and Associate Dean of the College of Home Economics*
Ph.D., Georgia
- Walz, Joel, *Assistant Professor of Romance Languages*
Ph.D., Indiana
- Wampler, John Edward, *Professor of Biochemistry*
Ph.D., Tennessee
- Wampler, Karen Smith, *Assistant Professor of Child and Family Development*
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- Wander, Joseph D., *Assistant Professor of Chemistry*
Ph.D., Ohio State
- Wang, Marian, *Associate Professor of Foods and Nutrition*
Ph.D., Pennsylvania State
- Ware, Kenneth D., *Adjunct Professor of Forest Resources*
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Ph.D., Michigan State
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Ph.D., Massachusetts
- Watson, Hugh J., *Professor of Management*
D.B.A., Florida State
- Weaver, James B., Jr., *Professor of Agronomy*
Ph.D., North Carolina State
- Weber, Ruth E., *Research Professor of Social Work*
D.S.W., Case Western Reserve
- Weissburg, Michael, *Assistant Professor of Counselor Education and Director of Student Affairs*
Ph.D., Texas
- Welch, Roy Allen, *Research Professor of Geography*
Ph.D., Glasgow (Scotland)
- Weller, L. David, Jr., *Assistant Professor of Elementary Education*
Ph.D., Iowa State
- Wenston, Paul R., *Associate Professor of Mathematics*
Ph.D., Carnegie Mellon

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M.L.A., Pennsylvania
- Wheeler, James O., *Professor of Geography*
Ph.D., Indiana
- White, Fred C., *Professor of Agricultural Economics*
Ph.D., Oklahoma State
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- Whitney, James A., *Associate Professor of Geology*
Ph.D., Stanford
- Whitten, Betty J., *Associate Professor of Quantitative Business Analysis*
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- Whitworth, Clyde Weydell, *Professor of Pharmacutics*
Ph.D., Florida
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Ph.D., Washington
- Wiegel, Jurgen K. W., *Temporary Associate Professor of Microbiology*
Ph.D., Geo Aug U Gottingen
- Wiegert, Richard George, *Professor of Zoology*
Ph.D., Michigan
- Wilbanks, William A., *Professor of Psychology*
Ph.D., Texas
- Wildt, Albert R., *Associate Professor of Marketing and Distribution*
Ph.D., Purdue
- Wilkinson, Gene L., *Associate Professor of Educational Media and Librarianship*
Ed.D., Indiana
- Wilkinson, Robert E., *Professor of Agronomy, Georgia Experiment Station, Griffin*
Ph.D., California (Davis)
- Williams, Anne, *Assistant Professor of English*
Ph.D., Cornell
- Wilson, Gerald H., *Assistant Professor of Religion*
Ph.D., Yale
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- Windal, Floyd W., *Professor of Accounting*
Ph.D., Illinois
- Winston, Roger Bradley, Jr., *Assistant Professor of Counselor Education*
Ph.D., Georgia
- Wise, James O., *Professor of Agricultural Economics*
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- Wood, Mary Margaret, *Professor of Special Education*
Ed.D., Georgia
- Wood, Norman J., *Professor of Economics*
Ph.D., Columbia
- Wood, Robert M., *Associate Professor of Physics*
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- Wooley, Richard E., *Professor of Medical Microbiology*
Ph.D., Georgia
- Worthington, Robert Earl, *Associate Professor of Food Science, Georgia Experiment Station, Griffin*
Ph.D., Iowa State
- Wyatt, Robert E., *Assistant Professor of Botany*
Ph.D., Duke
- Wyatt, Roger D., *Associate Professor of Poultry Science*
Ph.D., North Carolina State
- Wynes, Charles E., *Professor of History*
Ph.D., Virginia
- Wynn, Willard K., Jr., *Associate Professor of Plant Pathology*
Ph.D., Florida
- Yang, Raymond K., *Associate Professor of Child and Family Development*
Ph.D., Cornell
- Yeany, Russell H., Jr., *Professor of Science Education*
Ph.D., Colorado
- Young, D. Parker, *Professor of Higher Education*
Ed.D., Georgia
- Zeichner, Amos, *Assistant Professor of Psychology*
Ph.D., McGill
- Ziemke, Earl F., *Research Professor of History and Lecturer of Military Science*
Ph.D., Wisconsin
- Ziomek, Henryk, *Professor of Spanish*
Ph.D., Minnesota

APPENDIX

DEPARTMENTAL PREFIX ABBREVIATIONS

Accounting	ACC	Environmental Design	ENV
Adult Education	EAD	Environmental Health Science	EHS
Agricultural Economics	AEC	Exceptional Children Education	EXC
Agricultural Education	EAG	Foods and Nutrition	FDN
Agricultural Engineering	AEN	Food Science	FS
Agricultural Extension	AET	Foreign Language Education	EFL
Agronomy	AGY	Forest Resources	FRS
Animal Nutrition	AN	French	FR
Animal Science	AS	Geography	GGY
Anthropology	ANT	Geology	GLY
Aramaic/Syriac	ARA	German	GER
Art	ART	Gerontology	GNT
Art Education	EAR	Global Policy Studies	GPS
Astronomy	AST	Graduate School	GSC
Avian Medicine	AM	Greek	GRK
Banking and Finance	FIN	Health Education	HED
Biochemistry	BCH	Health Occupations Education	EHO
Biology	BIO	Hebrew	HBW
Botany	BOT	Higher Education	EHI
Business Education	EBE	Historic Preservation	HP
Business Law	BL	History	HIS
Catalan	CAT	Home Economics Education	EHE
Chemistry	CHM	Horticulture	HOR
Child and Family Development	CFD	Housing, Home Management and	
Classics	CLC	Consumer Economics	HMC
Clothing, Textiles, Interiors and		Industrial Arts Education	EIA
Furnishings	CTI	Italian	ITA
Comparative Literature	CML	Journalism and Mass Communication	JRL
Computer Science	CSC	Landscape Architecture	LAR
Counseling and Human		Latin	LAT
Development Services	ECP	Library Education	ELE
Curriculum and Supervision	ECS	Linguistics	LIN
Dairy Science	DS	Management	MAN
Distributive Education	EDE	Management Sciences	MS
Drama	DRA	Marketing	MKT
Early Childhood Education	ECE	Mathematics	MAT
Economics	ECN	Mathematics Education	EMT
Educational Administration	EAS	Medical Microbiology	MMB
Educational Media	EAV	Microbiology	MIB
Educational Philosophy	EPH	Middle School Education	EMS
Educational Psychology and		Molecular and Population	
Measurement	EPY	Genetics	MPG
Educational Research	ERS	Music	MUS
Elementary Education	EEL	Music Education	EMU
Engineering Technology	ET	Parasitology	PAR
English	ENG	Pharmacy	PHR
English Education	EEN	Philosophy	PHY
Entomology	ENT	Physical Education	PED

Physics	PCS	Scandinavian	SCA
Physiology and Pharmacology	VPH	Science Education	ESC
Plant Pathology	PAT	Small Animal Medicine and Surgery	SMS
Political Science	POL	Social Science Education	ESS
Portuguese	POR	Social Work	SW
Poultry Science	PS	Social Work Education	ESW
Provençal	PRO	Sociology	SOC
Psychology	PSY	Spanish	SP
Reading Education	ERD	Speech Communication	SPC
Real Estate and Legal Studies	RE	Speech Education	ESP
Recreation and Leisure Studies	REC	Speech Pathology and Audiology	SPA
Religion	REL	Statistics	STA
Risk Management and Insurance	INS	Student Teaching	EST
Romance Language	ROM	Trade and Industrial Education	ETI
Russian	RUS	Veterinary Anatomy and Radiology	VAR
Russian Translation	RUT	Veterinary Pathology	VPP
Safety Education	SED	Vocational Education	EVO
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Graduate Admissions
534 Graduate Studies Building
The University of Georgia
Athens, Georgia 30602

Elaine Cammack
Registrar's Office
~~Memorial Hall~~ 108 Academic
CAMPUS

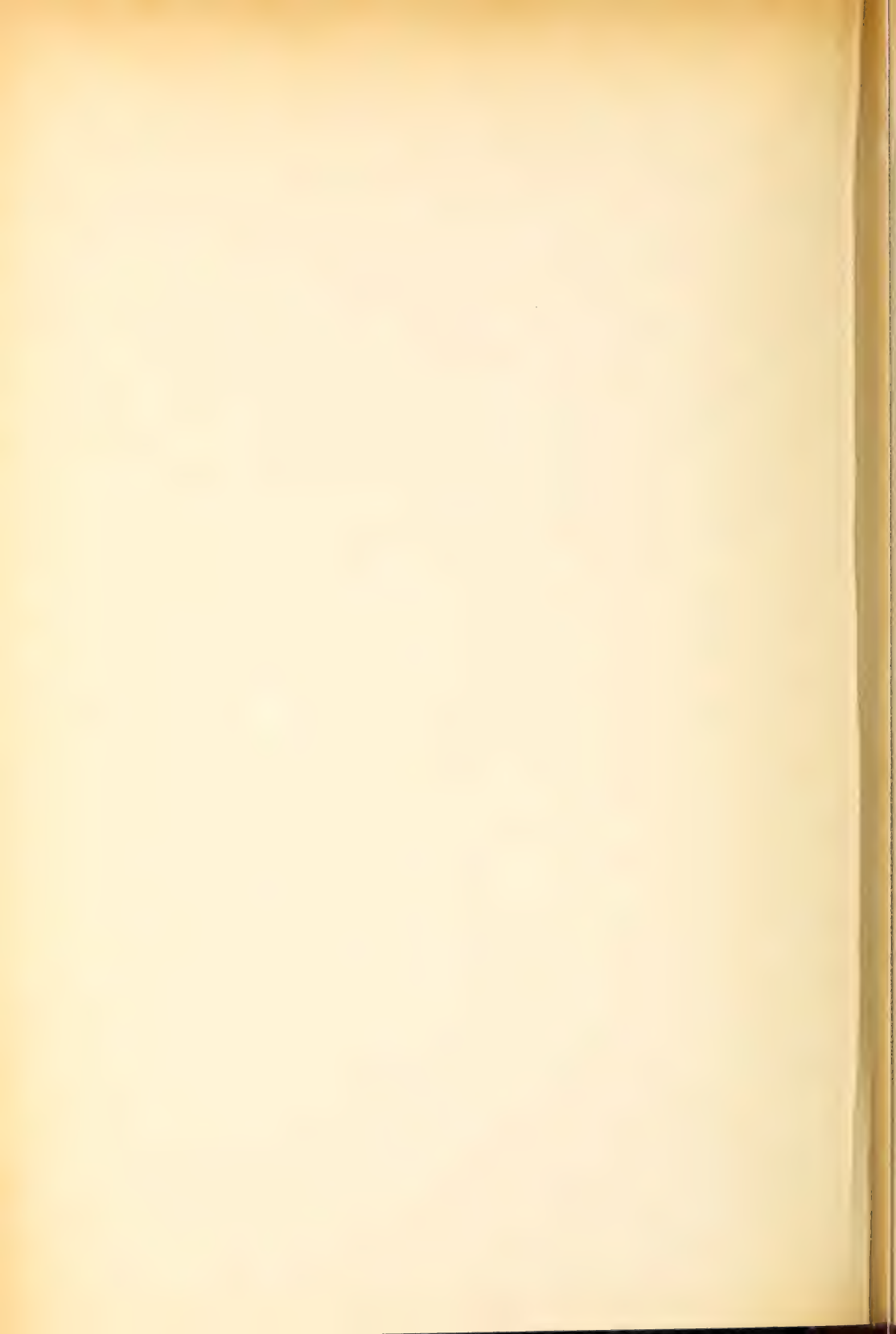
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UNDERGRADUATE STUDY

A Unit of the University System of Georgia





The University of Georgia Bulletin 1984-85

Undergraduate Study



A Unit of the University System of Georgia

Volume LXXXI
January 1984

The University of Georgia is committed to the principle of affirmative action and shall not discriminate against otherwise qualified persons on the basis of race, color, religion, national origin, sex, age, physical or mental handicap, disability, or veteran's status in its recruitment, admissions, employment, facility and program accessibility, or services.

While every effort is made to provide accurate and current information, the University reserves the right to change, without notice, statements in the Bulletin concerning rules, policies, fees, curricula, courses, calendar, or other matters. Students enrolled at the University agree to comply with the University's rules and regulations and to accommodate to any changes necessary.

About the cover:

The University of Georgia, the nation's oldest state-chartered university, will be celebrating its bicentennial in 1985. A 16-month calendar of events begins at Commencement, 1984, and concludes in October, 1985.

The photographs on the cover echo the triple focus of the Bicentennial Celebration: the University's history, its present status, and its future.

The photographs of the Arch (upper, right) and the student studying were taken in 1893 by Telamon Cuyler. The Arch, one of the traditional symbols of the University, once had gates swinging from its three pillars. It was erected in 1856 at the front of campus. Modeled after the Great Seal of Georgia, its columns represent wisdom, justice, and moderation. For years there was a "rule" that no freshmen could walk through the Arch.

Hugh M. Dorsey, who later became governor of Georgia, was photographed by his roommate while studying in his room. Like many of the students of the period, he boarded in a town residence. The 1893 photographs are courtesy of Special Collections Division, The University of Georgia Libraries.

The photograph of Old College (lower, left) is a contemporary view of the first permanent building on campus. Old College was completed in 1806 and was originally used for all college purposes. It served as a dormitory for many years and was converted to administrative offices in 1947. It is still used for that purpose today.

The Redcoat Marching Band (upper, left) is a tradition that most students associate with the social side of campus life. Perhaps the newest tradition on campus concerns the use of computers for instructional purposes (center, right). The University's facilities are among the finest at American universities and are available to faculty, staff, and students.

Graduation is, of course, one of the oldest traditions on any college campus. Commencement ceremonies at the University are always special occasions, but Commencement, 1985, will mark the graduation of the Bicentennial class and symbolize the University's commitment to a third century of progress.

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ACADEMIC CALENDAR

1984—1985

WINTER QUARTER

1984

Residence Halls Open	Jan. 3, Tu
Orientation	Jan. 4, W
Late Registration (Graduate Students)	Jan. 4, W (1:00-6:00 p.m.)
Late Registration (All Students)	Jan. 5, Th
Classes Begin	Jan. 6, F
Drop/Add	Jan. 6, 9-10, F, M, Tu
Midpoint of Quarter	Feb. 9, Th
Last Day of Classes	Mar. 14, W
Final Exams	Mar. 15-16, 19-20, Th, F, M, Tu

SPRING QUARTER

1984

Residence Halls Open	Mar. 25, Su
Orientation	Mar. 26, M
Late Registration (Graduate Students)	Mar. 26, M (1:00-6:00 p.m.)
Late Registration (All Students)	Mar. 27, Tu
Classes Begin	Mar. 28, W
Drop/Add	Mar. 28-30, W-F
Midpoint of Quarter	May 1, Tu
Last Day of Classes	June 4, M
Final Exams	June 5-8, Tu-F
Commencement	June 9, Sa

SUMMER QUARTER

1984

Residence Halls Open	June 12, Tu
Orientation	June 13, W
Late Registration (Graduate Students)	June 13, W (1:00-6:00 p.m.)
Late Registration (All Students)	June 14, Th
Classes Begin	June 15, F
Drop/Add	June 15, 18-19, F, M, Tu
Holiday (No Classes)	July 4, W

Short Session

Note: Classes meet for 120 minutes *daily*

Midpoint of Session

Last Day of Classes

Final Exams

June 29, F

July 16, M

July 17-18, Tu-W

Regular (Thru) Session

Note: Classes meet for 60 minutes *daily*

Midpoint of Session

Last Day of Classes

Final Exams

July 16, M

Aug. 14, Tu

Aug. 15-17, W-F

FALL QUARTER

1984

Residence Halls Open	Sept. 16, Su
Orientation	Sept. 17, M
Late Registration (Graduate Students)	Sept. 17, M (1:00-6:00 p.m.)
Late Registration (All Students)	Sept. 18-19, Tu-W
Classes Begin	Sept. 20, Th
Drop/Add	Sept. 20-21, 24, Th, F, M
Midpoint of Quarter	Oct. 24, W
Thanksgiving Recess	Nov. 21-25, W-Su
Classes Resume	Nov. 26, M
Last Day of Classes	Dec. 3, M
Final Exams	Dec. 4-7, Tu-F

WINTER QUARTER

1985

Residence Halls Open	Jan. 2, W
Orientation	Jan. 3, Th
Late Registration (Graduate Students)	Jan. 3, Th (1:00-6:00 p.m.)
Late Registration (All Students)	Jan. 4, F
Classes Begin	Jan. 7, M
Drop/Add	Jan. 7-9, M, Tu, W
Midpoint of Quarter	Feb. 8, F
Last Day of Classes	Mar. 14, Th
Final Exams	Mar. 15, 18-20, F, M, Tu, W

SPRING QUARTER

1985

Residence Halls Open	Mar. 24, Su
Orientation	Mar. 25, M
Late Registration (Graduate Students)	Mar. 25, M (1:00-6:00 p.m.)
Late Registration (All Students)	Mar. 26, Tu
Classes Begin	Mar. 27, W
Drop/Add	Mar. 27-29, W-F
Midpoint of Quarter	Apr. 30, Tu
Last Day of Classes	June 3, M
Final Exams	June 4-7, Tu-F
Commencement	June 8, Sa

This Calendar is correct as of the date of this publication, but may be subject to change during the next year. Please refer to the *Schedule of Classes* and/or other special announcements that may be forthcoming.



The University of Georgia Athens, Georgia

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CAMPUS MAP KEY

Academic/0120, 7-A
 Aderhold Hall/1060, 3-K
 Administrative Data Processing Center/
 0110, 5-A
 Agricultural Extension/1043, 6-M
 Agronomy Farm/3050, 1-B
 Alpha Chi Omega Sorority/2218, 6-L
 Alpha Epsilon Pi Fraternity/2232, 3-I
 Alpha Psi/2255, 4-O
 Alpha Tau Omega Fraternity/2234, 3-H
 Alumni House/1661, 5-N
 Automotive Center/1634, 2-F
 Baldwin Hall/0050, 5-D
 Baptist Student Union/2603, 7-E
 Barrow Hall/1021, 4-I
 Baseball Field House/2616 5-P
 Biological Sciences/1000, 4-H
 Bishop House/0032, 6-B
 Boggs Hall/2216, 7-J
 Bolton Hall/2210, 7-I
 Boyd Graduate Studies/1023, 4-J
 Brumby Hall/2213, 10-M
 Business Administration/0055, 6-D
 Business Services/0110, 6-A
 Business Services Annex/0121, 6-A
 Caldwell Hall/0046, 7-D
 Catholic Student Center/2613, 7-P
 Candler Hall/0031, 7-C
 Chapel/0022, 7-B
 Chemistry/1001, 5-H
 Child Development Laboratory/1652,
 4-L
 Chi Phi Fraternity/2200, 8-C
 Chi Psi Fraternity/2202, 8-D
 Church Hall/2215, 7-J
 Clark Howell Hall/0290, 6-H
 Coliseum/1654, 5-M
 Conner Hall/1011, 4-H
 Creswell Hall/2211, 8-J
 Dairy Research Building/2840, 2-M
 Dairy Science/1050, 3-K
 Dawson Hall/1010, 5-J
 Dean William Tate Student Center/0672, 5-C
 Delta Phi Epsilon Sorority/2219, 7-P
 Demosthenian Hall/0021, 7-A
 Driftmier Engineering Center/1090, 3-M
 Dudley Hall/1051, 3-J
 Ecology Building/1033, 3-J
 Environmental Design/0044, 7-D
 Environmental Laboratory, S.E./2698,
 2-C
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 Greenhouse 2-N, PHR, PAT/1351, 4-L
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 Lumpkin St., 1238 S./2030, Home
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 Lumpkin St., 1242½ S./2627, Offices
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 Lumpkin St., 1240 S./2628, University
 Employees Federal Credit Union, 6-M
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 Tucker Hall/1250, 2-J
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 Visual Arts Annex/0026, 6-B
 Waddell Hall/0041, 6-C
 Wesley Foundation/2611, 6-M

THE UNIVERSITY SYSTEM OF GEORGIA

The University System of Georgia includes 33 state-sponsored, public institutions located throughout Georgia—4 universities, 14 senior colleges and 15 junior colleges.

A 15-member constitutional Board of Regents—one from each of the state's 10 Congressional Districts and five from the state-at-large—governs the University System which was established in 1932. Board members are appointed by the Governor, subject to state senate confirmation, for seven-year terms.

The Chairperson, the Vice Chairperson, and other officers of the Board are elected by its membership. The Chancellor, who is not a Board member, is the chief executive officer of the Board and chief administrative officer of the University System.

The overall programs and services of the University System are offered through three major components: Instruction; Public Service/Continuing Education; Research.

INSTRUCTION includes programs of study leading to degrees, ranging from the associate (2-year) to the doctoral level, and certificates.

Requirements for admission to instructional programs are set by institutions, pursuant to policies of the Board of Regents which sets minimum academic standards and leaves each institution the prerogative of establishing higher standards. Application for admission should be made directly to institutions.

A Core Curriculum, defining freshman and sophomore courses for students who seek degrees beyond the associate level, is in effect for all University System institutions. This 90-hour Curriculum includes 60 in general education—humanities, mathematics, natural and social sciences—and 30 in the student's chosen major area. It facilitates transfer of freshman and sophomore credits within the University System.

PUBLIC SERVICE/CONTINUING EDUCATION includes non-degree programs, special college-degree-credit courses, and institutional outreach programs.

Non-degree activities would include short courses, conferences, seminars, lectures and consultative services, in many interest areas. These activities, usually of short duration, are designed to meet special educational, informational and cultural needs of people served

by institutions. All institutions conduct some non-degree public service/continuing education. College-degree-credit courses are typically offered through extension center programs and teacher education consortiums.

RESEARCH encompasses investigations conducted for the discovery and application of knowledge. These investigations include clearly defined projects in some cases and non-programmatic activities in other cases. Research is conducted on campuses and at other locations and projects related to a large variety of educational objectives and societal needs. Most research is conducted by the 4 universities though some senior colleges also have research efforts underway.

Board of Regents' policies for government, management and control of the University System and the Chancellor's administrative actions provide institutions a high degree of autonomy. The President is the executive head of each institution and is recommended by the Chancellor and appointed by the Board.

The University System Advisory Council, with 34 committees, engenders continual dialogue on major academic and administrative matters and makes recommendations to the Chancellor, who transmits them to the Board as appropriate, regarding academic and administrative operations in the System. The Council consists of the Chancellor, the Vice Chancellor, and all Presidents as voting members. It includes other officials of institutions as nonvoting members. The Council's 21 academic and 13 administrative committees are composed of institutional representatives, typically one from each unit, and deal with matters of System-wide application.

State appropriations for the University System are requested by and made to the Board of Regents. Allocations of the appropriations are made by the Board to institutions. Approximately 52 percent of state appropriations are allocated for instruction. In fiscal 1980-81, the percentages of all funds for instruction showed 77 percent from state appropriations, 20 percent from student fees and 3 percent from other internal income.

Matriculation fees and nonresident tuition fees for students at all institutions are established by the Board of Regents. All students pay matriculation fees while out-of-state students pay nonresident tuition in addition. Other fees for student services and activities are established by institutions, subject to Board of Regents' approval. Non-mandatory fees established by institutions are subject to approval of the Board of Regents office.

INSTITUTIONS OF THE UNIVERSITY SYSTEM OF GEORGIA

h—On-Campus Student Housing Facilities
 Degrees Awarded: A—Associate; B—Bachelor's; J—Juris Doctor;
 M—Master's; S—Specialist in Education; D—Doctor's

Universities

Athens 30602
 University of Georgia—h; A,B,J,M,S,D
 Atlanta 30332
 Georgia Institute of Technology—h; B,M,D
 Atlanta 30303
 Georgia State University—A,B,M,S,D
 Augusta 30912
 Medical College of Georgia—h; A,B,M,D

Senior Colleges

Albany 31705
 Albany State College—h; B,M
 Americus 31709
 Georgia Southwestern College—h; A,B,M,S
 Augusta 30910
 Augusta College—A,B,M,S
 Carrollton 30118
 West Georgia College—h; A,B,M,S
 Columbus 31993
 Columbus College—A,B,M,S
 Dahlonega 30597
 North Georgia College—h; A,B,M
 Fort Valley 31030
 Fort Valley State College—h; A,B,M
 Marietta 30061
 Kennesaw College—A,B
 Marietta 30060
 Southern Technical Institute—h; A,B
 Milledgeville 31061
 Georgia College—h; A,B,M,S
 Savannah 31406
 Armstrong State College—A,B,M
 Savannah 31404
 Savannah State College—h; A,B,M
 Statesboro 30460
 Georgia Southern College—h; A,B,M,S
 Valdosta 31698
 Valdosta State College—h; A,B,M,S

Junior Colleges

Albany 31707
 Albany Junior College—A
 Atlanta 30310
 Atlanta Junior College—A
 Bainbridge 31717
 Bainbridge Junior College—A
 Barnesville 30204
 Gordon Junior College—h; A

Brunswick 31523
 Brunswick Junior College—A
 Cochran 31014
 Middle Georgia College—h; A
 Dalton 30720
 Dalton Junior College—A
 Douglas 31533
 South Georgia College—h; A
 Gainesville 30403
 Gainesville Junior College—A
 Macon 31297
 Macon Junior College—A
 Morrow 30260
 Clayton Junior College—A
 Rome 30161
 Floyd Junior College—A
 Swainsboro 30401
 Emanuel County Junior College—A
 Tifton 31793
 Abraham Baldwin Agri. College—h; A
 Waycross 31501
 Waycross Junior College—A

University System of Georgia
 244 Washington Street, S.W.
 Atlanta, Georgia 30334



THE UNIVERSITY SYSTEM OF GEORGIA

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THE UNIVERSITY OF GEORGIA

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Morris O. Phelps, *Director*

Claire C. Swann, *Associate Director*

Libraries

David F. Bishop, *Director*

COLLEGES AND SCHOOLS

College of Arts and Sciences (1801)

William J. Payne, *Dean*

College of Agriculture (1859)

William P. Flatt, *Dean*

School of Law (1859)

J. Ralph Beaird, *Dean*

College of Pharmacy (1903)

Howard C. Ansel, *Dean*

School of Forest Resources (1906)

Leon A. Hargreaves, Jr., *Dean*

College of Education (1908)

Gerald R. Firth, *Acting Dean*

Graduate School (1910)

John C. Dowling, *Dean*

College of Business Administration (1912)

J.M. Tull School of Accounting (1977)

Albert W. Niemi, Jr., *Dean*

School of Journalism and Mass

Communication (1915)

J. Thomas Russell, *Dean*

College of Home Economics (1933)

Emily Q. Pou, *Dean*

College of Veterinary Medicine (1946)

David P. Anderson, *Dean*

School of Social Work (1964)

Charles A. Stewart, *Dean*

School of Environmental Design (1969)

Darrel G. Morrison, *Dean*



GENERAL UNIVERSITY INFORMATION

THE UNIVERSITY

HISTORY

When The University of Georgia was incorporated by an act of the General Assembly on January 27, 1785, Georgia became the first state to charter a state-supported university. In 1784 the General Assembly had set aside 40,000 acres of land to endow a college or seminary of learning.

At the first meeting of the board of trustees, held in Augusta on February 13, 1786, Abraham Baldwin was selected president of the University. Baldwin, a native of Connecticut and a graduate of Yale University who had come to Georgia in 1784, drafted the charter adopted by the General Assembly.

The University was actually established in 1801 when a committee of the board of trustees selected a land site. John Milledge, later a governor of the state, purchased and gave to the board of trustees the chosen tract of 633 acres on the banks of the Oconee River in northeast Georgia.

Josiah Meigs was named president of the University and work was begun on the first building, originally called Franklin College in honor of Benjamin Franklin and now known as Old College. The University graduated its first class in 1804.

The curriculum of traditional classical studies was broadened in 1843 to include courses in law, and again in 1872 when the University received federal funds for instruction in agriculture and mechanical arts.

Thirteen schools and colleges, with auxiliary divisions, carry on the University's programs of teaching, research and service. These colleges and schools and the dates of their establishment as separate administrative units are: College of Arts and Sciences, 1801; College of Agriculture, 1859; School of Law, 1859; College of Pharmacy, 1903; School of Forest Resources, 1906; College of Education, 1908; Graduate School, 1910; College of Business Administration, 1912; School of Jour-

nalism and Mass Communication, 1915; College of Home Economics, 1933; College of Veterinary Medicine, 1946; School of Social Work, 1964; School of Environmental Design, 1969. The Division of General Extension, now the Georgia Center for Continuing Education, was incorporated into the University in 1947.

In 1931 the General Assembly of Georgia placed all state-supported institutions of higher education, including The University of Georgia, under the jurisdiction of a single board. This organization, known as the University System of Georgia, is governed by the Board of Regents. The Board of Regents' executive officer, the chancellor, exercises a general supervisory control over all institutions of the University System, with each institution having its own executive officers and faculty.

PURPOSE

"Et docere et rerum exquirere causas" . . . "To teach and to inquire into the nature of things."

The University of Georgia's motto succinctly sums up its purpose for existence. It is this commitment to the people of the state and the nation that shapes the University's growth and development.

Instruction

Teaching, the oldest function and purpose of the University, continues to be a primary and important responsibility. The institution affirms that the most basic right of its students is to receive from the University, its faculty and administration, that type of instruction, assistance, and counseling which will enable students to develop their talents.

Through its teaching and research programs, the University seeks to stimulate respect for truth; to promote an analytical

capacity of mind, enabling students to form intelligent conclusions and evaluate the significance of things; and to prepare them to be responsible citizens in a free and democratic society. A broad range of opportunities for career preparation is offered by the University through undergraduate and graduate degree programs.

One of the most important academic developments at the University in recent years has been its emergence as a major institution of graduate education.

Research

The enlargement and application of knowledge through programs of basic and applied research is another primary purpose of the University.

Research activities are conducted as part of the regular program of all academic departments. In addition, research centers and institutes have been created to study specialized problems or to house specialized equipment, bringing together investigators from several subject areas for interdisciplinary study, and making possible consultation and other services to government and industry.

These specialized research facilities include the Computer Center, Institute of Ecology, Marine Institute, Institute of Natural Resources, Institute for Behavioral Research, Center for Applied Isotope Studies, and the University Research Park. The park contains several University research laboratories as well as a number of federal, state, and private laboratories which work closely with the University. Other research programs include those of the Agricultural Experiment Stations located at Athens, Griffin, and Tifton, with branches throughout the state and the Veterinary Medicine Experiment Station in Athens.

The University of Georgia Research Foundation, Inc., was chartered in 1978. The Foundation manages the sponsored research program of the University and handles patents and copyrights for the University and the members of the faculty.

Service

The service function of the University expands the knowledge and expertise of the teaching and research faculty beyond the physical limits of the Athens campus, applying University resources to problems and situations throughout the state for the benefit of Georgia citizens. The University's service pro-

gram is responsive to the particular needs of individual citizens, public groups and agencies.

The service responsibility of the University is carried out through programs administered by the Georgia Center for Continuing Education, the Cooperative Extension Service, the Institute of Government, the Small Business Development Center, the Marine Extension Center and many other units in Athens and throughout the state. Each of the University's 13 schools and colleges also offers services which may assist in the improvement of the quality of life for Georgia residents.

As the needs of Georgians grow and change, the University's service program expands to meet those needs. The overall service program is structured to give Georgia citizens the information and instruction necessary to meet current and future challenges.

ACCREDITATION

The University of Georgia is fully accredited by the Southern Association of Colleges and Schools. In addition, a number of the University's 13 colleges and schools are further accredited by appropriate educational associations.

RESOURCES

The Athens Campus

The University sweeps across Athens' famed hills, covering approximately 3,500 acres within Clarke County.

Traditional North Campus is the home of the Colleges of Arts and Sciences and Business Administration, the Schools of Environmental Design, Law, and Journalism and Mass Communication, as well as the Main Library. Other noteworthy buildings on North Campus are Old College (1801), New College (1823), Demosthenian Hall (1824), the University Chapel (1832), and Phi Kappa Hall (1834). The Ladies' Garden Club Founders Memorial Garden enhances the area near the Landscape Architecture Building.

South Campus, with an array of modern structures, has grown southward as the University continues to expand. Buildings located there include Boyd Graduate Studies Research Center, Colleges of Agriculture, Home Economics, Veterinary Medicine, Education, and Pharmacy, and the Schools of

Forest Resources and Social Work, as well as the Georgia Center for Continuing Education and the Coliseum.

State funds complemented by liberal private gifts, grants from foundations, and federal grants continue to increase the building program on campus.

Libraries

The University's library system includes three major on-campus libraries—the Main Library, Science Library, and Law Library, which is administered by the School of Law. There are also several specialized libraries such as the Veterinary Medicine reading room and Georgia Center for Continuing Education library. In addition, there are libraries at the University's experiment stations in Griffin, Tifton and on Skidaway Island.

The largest in the state, the University's library system is a member of the Association of Research Libraries, which consists of the top 100 research libraries in the nation. The libraries house more than two million volumes as well as thousands of documents, newspapers and manuscripts, and more than one million library pieces are preserved in microfilm. The library's map room incorporates an impressive map collection of some 250,000 items and ranks 30th in the world, twelfth in the nation, and sixth in academic institutions.

An outstanding feature of the Main Library is the Rare Books and Manuscripts Department, a repository of rare and priceless relics. Among the special collections are the works and memorabilia of Erskine Caldwell and Margaret Mitchell, the original Confederate Constitution, and a collection of Confederate imprints, a notable Georgiana collection, many Southern historical manuscripts, and the sheet music of many well-known musicians.

The Richard B. Russell Memorial Library, an annex to the Main Library, houses the papers and memorabilia of the late Senator Russell, as well as the papers of many other elected officials.

Special services of the libraries include individual listening carrels, photocopy machines, and a student lounge. The Main Library's photography department produces slides, microfilm, and prints.

Nearly 350,000 volumes and an equivalent of 350,000 more in microfilm are housed in the University's Law Library. Its collection of British Commonwealth materials is considered one of the finest of its kind in the nation. Due in part to the total collection of

legal literature, the University is ranked in the top 25 of law school libraries.

Laboratory Facilities

The Science Center consists of six buildings housing the biological sciences, chemistry, physics, geography and geology, food science, and the animal sciences. All have well-equipped laboratories for instruction and research. The College of Pharmacy, the College of Agriculture, the School of Forest Resources, the College of Home Economics, and the College of Veterinary Medicine have extensive laboratory facilities. Modern business machines are used in accounting and business procedures courses in the College of Business Administration, and the School of Journalism maintains a press room and a radio-television studio for practical training. The Computer Center, which ranks among the most powerful installations in higher education in the United States, is located on South Campus in the Boyd Graduate Studies Research Center, which also houses the laboratories of the Department of Biochemistry. Other research installations are housed in the Riverbend Research Laboratories Building.

ATHENS

Georgia's "Classic City," Athens is a prospering community, one that reflects the charm of the Old South while developing in cultural and industrial areas.

A college town in every sense of the word, Athens appreciates its University population while recognizing its obligation to all residents to grow independently of the University.

The Clarke County population, according to a 1980 census estimate, is approximately 74,500.

Athens' elevation is 600 to 800 feet above mean sea level, and because of its geographic location, the city is sheltered from much of the extreme weather of the winter season. Mean temperature for January, the coldest month, is 43°F., and for July, the warmest month, 79°F. Average minimum and maximum temperatures for January are 33° and 53°F., and for July, 68° and 89°F. Average rainfall is 50.42 inches.

Athens is served by two daily newspapers and an independent student newspaper, *The Red and Black*, published Tuesday through Friday. Athens also has a weekly newspaper and the Atlanta newspapers, as well as six local

radio stations and the University's radio station, WUOG-FM.

Network television is available through direct reception or cable within a 100-mile radius of Athens.

Two hospitals offering comprehensive health care serve Athens, and there are more than 80 churches in the area.

ADMISSION

GENERAL REQUIREMENTS

Each applicant's record should reflect promise of growth, seriousness of purpose, and a sense of responsibility.

The University reserves the right to admit only those applicants whose general records indicate success in the university environment. The University also reserves the right to examine further any applicant by the use of psychological, achievement, aptitude tests, and personal interview.

The University of Georgia complies with the Civil Rights Act of 1964 and is an Affirmative Action/Equal Employment Opportunity institution. Admission and employment are not influenced by race, sex, color, religion, national origin or handicap. Additionally, the University is actively involved in affirmative action recruitment.

Rules Governing the Classification of Students as Residents and Non-Residents in the University System of Georgia

1. (a) If a person is 18 years of age or older, he or she may register as a resident student only upon a showing that he or she has been a legal resident of Georgia for a period of at least twelve months immediately preceding the date of registration.
(b) No emancipated minor or person 18 years of age or older shall be deemed to have gained or acquired in-state residence status for fee purposes while attending any educational institution in this state, in the absence of a clear demonstration that he or she has in fact established legal residence in this state. A clear demonstration of intent includes registering to vote, licensing any vehicles driven, and obtaining a personal driver's license.
2. If a person is under 18 years of age, he or she may register as a resident student only upon a showing that his or her supporting parent or guardian has been a legal resident of Georgia for a period of at least twelve months immediately preceding the date of registration.
3. A full-time employee of the University System and his or her spouse and dependent children may register on the payment of resident fees even though he or she has not been a legal resident of Georgia for the preceding twelve months.
4. Non-resident graduate students who hold teaching or research assistantships requiring at least one-third service may register as students in the institution in which they are employed on payment of resident fees.
5. Full-time teachers in the public schools of Georgia and their dependent children may enroll as students in the University System institutions on the payment of resident fees.
6. All aliens shall be classified as non-resident students; except, an alien who is living in this country under a visa permitting permanent residence shall have the same privilege of qualifying for resident status for fee purposes as a citizen of the United States.
7. Foreign students who attend institutions of the University System under financial sponsorship of civic or religious groups located in this state may be enrolled upon the payment of resident fees, provided the number of such foreign students in any one institution does not exceed the quota approved by the Board of Regents for that institution.
8. If the parents or legal guardian of a minor change his or her legal residence to another state following a period of legal residence in Georgia, the minor may continue to take courses for a period of twelve consecutive months on the payment of resident fees. After the expiration

of the twelve month period the student may continue his or her registration only upon the payment of fees at the non-resident rate.

9. In the event that a legal resident of Georgia is appointed as guardian of a non-resident minor, such minor will not be permitted to register as a resident student until the expiration of one year from the date of court appointment, and then only upon proper showing that such appointment was not made to avoid payment of the non-resident fees.
10. Military personnel and their dependents stationed in Georgia and on active duty, except military personnel assigned to System institutions for educational purposes, shall pay the same fees assessed residents of Georgia.
11. Career Consular Officers and their dependents who are citizens of the foreign nation which their Consular Office represents and who are stationed and living in Georgia under orders of their respective governments shall be entitled to enroll in University System institutions on payment of resident fees. This arrangement shall apply to those Consular Officers whose nations operate on the principle of educational reciprocity with the United States.
12. A non-resident student who is financially dependent upon a parent, parents, or spouse who has been a legal resident of Georgia for at least twelve consecutive months immediately preceding the date of registration shall pay the same fees assessed residents of Georgia; provided, however, that such financial dependence shall have existed for at least twelve consecutive months immediately preceding the date of registration.
13. A student is responsible for registering under the proper residency classification. A student classified as a non-resident who believes that he/she is entitled to be classified as a legal resident may petition the Registrar for a change in status. The petition must be filed no later than sixty (60) days after the quarter begins in order for the student to be considered for reclassification for that quarter. If the petition is granted, reclassification will not be retroactive to prior quarters. The necessary forms for this purpose are available in the Registrar's office.
14. Questions concerning residency for fee-payment purposes should be directed to one of the following persons:

Undergraduate applicants for admission:

Director of Admissions,
114 Academic Building

Graduate applicants for admission:

Director of Graduate Admissions,
534 Boyd Graduate Studies
Research Center

Currently enrolled students:

Assistant Registrar,
107 Academic Building.

How to Apply for Admission

Applications for undergraduate admission may be obtained from the Admissions Office, The University of Georgia, Athens, Georgia 30602. Completion of ALL forms and requirements is mandatory before the applicant's request for admission can be considered. Completed forms must be received at least 20 days prior to the registration date and must be accompanied by a non-refundable \$15.00 check or money order to cover the expense of processing the application. See the financial section of this bulletin for complete explanation of fees.

If the application forms, College Board Scholastic Aptitude Test scores, and other required records of the applicant are found to be complete and in proper order, the applicant will be evaluated in terms of predicted grade point average, scholastic aptitude, biographical data, and the probability of completing the requirements for the desired degree without regard to race, sex, color, religion, national origin, or handicap.

Acceptance of each applicant will be determined by the Faculty Admissions Committee subject to the right of appeal as provided in the University System.

Specific information concerning housing, orientation, pre-registration and transferred courses is sent to the student following his or her official acceptance.

The University reserves the right to terminate acceptance of application forms when enrollment limits are reached.

Test Requirements

The College Board's Scholastic Aptitude Test is required of all freshman applicants except applicants who have not attended high school in seven or more years and who do not wish to pursue a university degree.

Students who have had at least two years of foreign language in high school must take the College Board Achievement Test in that language if they plan to continue studying that

language. Optional achievement tests which may be taken for advanced credit include English, chemistry, biology, physics, American or European history, and mathematics.

Information for making application to take the required tests may be obtained from the high school principal or counselor, or directly from College Board, P.O. Box 592, Princeton, New Jersey 08540.

Recommended High School Curriculum

Prospective freshman applicants are encouraged to take college preparatory subjects in high school. Only grades made in English, mathematics, science, history and foreign language are used to calculate the high school grade point average.

Two years of foreign language are advised for students enrolling in the College of Arts and Sciences. Trigonometry, geometry, chemistry and physics are advised for any Bachelor of Science degree major.

Predicted Grade Average

Freshman applicants who qualify under the above subject requirements must have a predicted grade point average which indicates the student has the ability to pursue effectively the educational program of the University. The predicted grade point average is based upon high school record and College Board scores.

Choice of School or College

A student should register in the school or college in which his or her major interest lies. If undecided, the student should carefully review this bulletin to determine which school or college more nearly meets his or her interest. Quarterly appointments with academic advisors can be of assistance.

Transfer Students

Applicants must request that all official transcripts of studies pursued at any other colleges or universities be sent to the Director of Admissions. These transcripts must provide a statement of honorable dismissal. A student who is on academic probation or dismissal from the last institution attended may not enter the University.

Credit that the University will allow for work done in another institution within a given period of time may not exceed the nor-

mal amount of credit that could have been earned at the University during that time. A maximum of 105 academic quarter hours from a junior college, or 150 academic quarter hours from a senior college may be applied toward a degree. In order to earn a baccalaureate degree from the University, a minimum of 90 quarter hours in residence is required.

Students transferring to the University who have completed some or all of the core curriculum requirements at another unit of the University System will receive full transfer credit.

Transfer students should have an overall average of at least 2.0 in their previous college work to be assured of admission. Some colleges in the University may require a higher average for admission. Applicants with less than 45 quarter hours must meet both freshman and transfer requirements.

The number of hours of D credit which can be transferred will not exceed 20% of the hours earned with a grade of C or better. Credit for ENG 101 will be given only for grades of C or better. College credit will not be allowed for such courses as remedial English, mathematics, or courses basically of secondary school or terminal junior college level. Courses from a community or junior college that would be upper division at the University are generally non-transferable.

Evaluation of Transfer Applicant

Transfer applicants will be evaluated, reviewed, and accepted in the same manner as freshman applicants. The University reserves the right to deny admission to any transfer applicant when, in the opinion of the admissions committee, the academic standards or the admission procedures of any institution previously attended are not equivalent or comparable to those at the University.

Special Admissions

Persons over 18 years of age and veterans whose secondary schooling was interrupted by military service may be admitted by presenting a State Department of Education Certificate of High School Equivalency and by passing entrance examinations as determined by the admissions committee. In general, the admissions committee asks that applicants take the College Board Scholastic Aptitude Test (SAT). No student having attended secondary school during the previous 12 months

will be eligible for admission by this method.

Students will be considered for admission on this basis only after their class has graduated from high school.

Admissions of High School Juniors

Under exceptional circumstances, students may be admitted to the University at the end of their junior year in high school. These students must have outstanding records in college preparatory subjects and must present scores on the combined verbal and mathematics sections of the Scholastic Aptitude Test satisfactory to the University Faculty Admissions Committee. The recommendation of the student's high school principal or counselor will also be considered by the admissions committee.

Admission and Registration of Persons 62 Years of Age or Older

Pursuant to the provisions of an amendment to the Georgia Constitution, the Board of Regents established the following rules with respect to enrollment of persons of age 62 or older in units of the University System. Effective with the beginning of Fall quarter, 1977, to be eligible for enrollment under the provisions of this amendment such persons:

- (1) Must be residents of Georgia, 62 years of age or older at the time of registration, and must present a birth certificate or other comparable written documentation of age to enable the registrar to determine eligibility.
- (2) May enroll as regular students in courses offered for resident credit on a "space available" basis without payment of fees, except for supplies or laboratory or shop fees and transportation.
- (3) Must meet all System and institution admission requirements.
- (4) Will have all usual student and institutional records maintained.
- (5) Must meet all System, Institutional, Legislated degree requirements such as Regents' Test, Major Area Exam and History and Constitution Instruction or Exams, if they are degree-seeking students.
- (6) May not enroll in Dental, Medical, Veterinary, or Law Schools under the provisions of this policy.

Graduate and Professional Students

Students in the professional programs of law,

pharmacy, and veterinary medicine must meet additional admission requirements found in the appropriate sections of the bulletin.

Students in graduate programs should consult the Graduate School Bulletin or the dean of the particular school or college for a list of requirements.

The University reserves the right to reject any applicants whose records indicate inadequate preparation to do college work even though they may meet the entrance requirements set forth above.

Applicants for Readmission

Undergraduate students who are out of the University for one calendar year must make application for readmission at least 20 days (30 days for graduate students) prior to the published date of registration. Application for readmission forms for undergraduate students are available from the Office of Admissions. Graduate students should contact the Graduate Admissions Office.

Orientation

Undergraduates who enter for the Fall quarter will have the opportunity to choose one session of a summer orientation program to visit the campus for general orientation, academic advisement, and registration. Orientation schedules are sent early each spring to those students who have been accepted for the following Fall quarter.

Registration and Late Registration Penalties

Registration dates are listed in this bulletin. A student who fails to register on the scheduled days will be subject to penalties of \$25.00 as listed in the financial information section. No student will be admitted after the expiration of the third day beyond scheduled dates except by special permission.

Medical History

New students and former students who have been absent from the University for over one year must have a complete medical history form on file with the University Health Service prior to registration. Medical history forms will be sent with notification of acceptance for admission and should be returned to the Medical Records Department, University Health Service.

FINANCES AND AID

FINANCIAL INFORMATION

Cost of Education

The estimated cost of education for a Georgia resident is \$4,200 per academic year. This estimate includes three quarters of tuition and fees, books and supplies, room and board, and personal expenses. An additional out-of-state fee assessed all non-Georgia residents increases this estimate to \$6,150.

Students of forestry, law, pharmacy, and veterinary medicine will find the cost somewhat more because of higher fees required.

The University reserves the right to change its fees, charges, rules, and regulations at the beginning of any quarter and without previous notice. This right will be exercised cautiously.

Fees and Expenses

Application Fees

Graduate	\$10.00
Undergraduate	\$15.00

Required of all new students applying for admission, and covers expenses of processing applications only.

Make check or money order payable to The University of Georgia. DO NOT SEND CASH.

Fee Deposit—Law School \$50.00

Required of a new student accepted by the Law School to reserve his or her place in the class. Must be paid by April 1 of the year in which admission is sought, or within 30 days of acceptance, whichever comes later. Deposit is non-refundable, but is applicable toward payment of the first semester matriculation fees.

Fee Deposit—College of Veterinary Medicine \$100.00

Required from each applicant accepted for admission to the College of Veterinary Medicine. Must be received within three weeks after the date of issuance of the acceptance. If deposit is not received within the specified time, an alternate candidate will be called to fill the place of the accepted applicant. Deposit is non-refundable, but is applicable toward payment of the first quarter matriculation fees.

Auditor's Fee

Persons desiring to attend courses or lectures without examination or credit may register to audit a course. Fees for auditors are the same as those for students registered for credit.

Breakage Deposit and Course Fees

There are no general laboratory fees, but special fees, including breakage fees, are required for a few courses and some field trips. Students are held responsible for any breakage they cause.

Special Fees and Charges

Service Charge for Late Registration	\$25.00
Service Charge for Late Payment of Housing Fee	\$25.00

Special Examination Fee
The University reserves the right to charge a fee for any special examination given at the request of a student.

Transcript Fee	
Each copy	\$2.00
Special handling fee for same-day service	\$1.00

Graduation Fee	
Undergraduate degree	\$10.00
Master's degree	\$10.00

Doctor's degree (includes hood)	\$25.00
College of Veterinary Medicine/ School of Law	\$13.00
Replacement Fee	
Student Schedule and Fee Invoice	\$2.00
Certificate of American Studies for Foreign Students	\$5.00

Special Programs Fees

Agencies sponsoring regularly enrolled students who receive special academic programming or administrative services are expected to pay fees in addition to those normally charged for the usual services. While rates charged will be determined by con-

tract arrangements, the scheduled fees for such services will be \$125 per quarter.

Method of Payment

Fees may be paid in one of the following manners:

By Mail

Pre-addressed envelopes will be provided for mailing fee and dorm cards along with check or money order (do not mail cash) to the Treasurer's Office. Payment must be received by the fee payment deadline to avoid schedule cancellation.

Matriculation Fees

For Students with 12 or more Credit Hours

	Mainte- nance	Non- Resident	Student Activities	Student Athletic ¹	Transporta- tion Fee	Health ²	Total
Regular Students							
Residents	\$328.00		\$18.50	\$10.00	\$17.50	\$40.00	\$ 414.00
Non-residents	328.00	\$ 656.00	18.50	10.00	17.50	40.00	1,070.00
Forest Resources Students							
Residents	388.00		18.50	10.00	17.50	40.00	474.00
Non-residents	388.00	775.00	18.50	10.00	17.50	40.00	1,249.00
Law Students							
Residents	612.00		27.75	15.00	26.25	60.00	741.00
Non-residents	612.00	1,224.00	27.75	15.00	26.25	60.00	1,965.00
Pharmacy Students							
Residents	380.00		18.50	10.00	17.50	40.00	466.00
Non-residents	380.00	759.00	18.50	10.00	17.50	40.00	1,225.00
Veterinary Students	449.00		18.50	10.00	17.50	40.00	535.00

(Payable each term during registration period.)

The per credit hour charge for students with less than 12 credit hours is as follows:

	Residents	Non-residents
Regular Students	\$28.00	\$ 83.00
Forest Resources Students	32.00	96.00
Law Students ³	52.00	156.00
Pharmacy Students	32.00	96.00
Veterinary Students ⁴	37.00	N/A

Each student with less than 12 credit hours must also pay the following:

	Law Students	All other students
Health fee ²	\$60.00	\$40.00
Student activity fee	27.75	18.50
Student athletic fee ¹	15.00	10.00
Transportation fee	26.25	17.50

(Payable each term during registration period.)

Note: Students who enroll for six hours or less have the option of waiving student activity, student athletic, and health fees. This waiver must be elected at the time of registration.

¹Student athletic fee assessed for Fall, Winter, and Spring quarters only. For Law Students, this fee is assessed for Fall and Spring semesters only.

²Optional Dental Fee available to all enrolled students and their spouses for an additional \$24.00

³Law Students' fees are assessed at the semester rate.

⁴Does not apply to senior Veterinary Medicine students enrolled in core-elective blocks. These students will be assessed a flat fee of \$535.00 per quarter.

At Late (Phase II) Registration

Students who register during late registration may pay by check or cash at the Treasurer's station located in the Chicopee Building. (DO NOT MAIL LATE REGISTRATION FEES.)

At Cashier's Window

Payment may be made by cash or check during cashiering hours at the cashier's window located on the first floor of the Business Services Building, 424 East Broad Street.

At Night Depository

Payment may be made after hours until late fee payment deadline at the night depository located at the front of the Business Services Building, 424 East Broad Street.

Time of Payment

Pre-Registration (Phase I)

Students registered during the current term for the next quarter must pay fees approximately two weeks prior to the first day of classes. Those who fail to pay fees by the deadline will be dropped from the class rolls, and the class openings will be made available to others who register late.

Late Registration (Phase II)

Fees, deposits, and charges for room and board are due and payable at the time of late registration. A student is not officially registered at the University until such fees and charges are paid in full. A late registration service charge will be assessed after the close of Phase II. If payment is not made by the end of the late registration period, the student's registration will be cancelled. Exceptions to the time of payment are outlined below.

Deferred Payment of Fees

Students who meet one of the following requirements may defer payment upon approval by the Treasurer's Office, Banking and Trust Department, Business Services Building, 424 East Broad Street:

1. Students whose fees are guaranteed and will be paid by an outside agency under an agreement with The University of Georgia up to the amount authorized for a specific academic quarter.
2. Students who have a University-administered loan or scholarship in process up to the amount of the aid granted for a specified academic quarter.
3. Foreign students who have a certificate or other acceptable documented evidence

that payment of fees will be made after a statement of charges for the student has been presented for payment. The deferment will be limited to the amount stated in the certificate or other document for a specified academic quarter.

4. Students who are recipients of fellowships, assistantships, or stipends administered by the University may defer their fees.

Deferred fees will be due and payable as follows:

QUARTER

Fall	November 1
Winter	February 1
Spring	May 1
Summer	July 1

SEMESTER

Fall	November 1
Spring	May 1
Summer	July 1

An exception to this schedule is made in the case of payroll deduction deferments for graduate students who hold assistantships through the Graduate School. During the Fall, Winter, and Spring Quarters, one-half of the deferred amount will be due according to the above schedule, and the balance will be due one month later.

Fee Refunds

Students who formally withdraw from the University prior to the first day of classes are entitled to a refund of 100 percent of fees paid for that quarter; within one week following the first day of classes, 80 percent; from one to two weeks after the first day of classes, 60 percent; from two to three weeks after the first day of classes, 40 percent; from three to four weeks after the first day of classes, 20 percent. Refunds will be made at the end of a quarter. No refunds for reduction in hours after the drop/add period are allowed unless such reduction is the fault of the University.

The following are not entitled to any refund of fees paid: students who withdraw after a period of four weeks has elapsed from the scheduled registration date; students suspended for disciplinary reasons; students who leave the University when disciplinary action is pending, or students who do not formally withdraw.

Information on refunds of payment for room and meals is found under "Housing."

ACADEMIC PROGRAM

The statements set forth in this bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and this institution. While the provisions of this bulletin ordinarily will be applied as stated, The University of Georgia reserves the right to change any provision listed in this bulletin including, but not limited to, academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be available in the Registrar's Office, in the office of the academic deans, and in the Office of the Vice President for Academic Affairs. It is especially important that each student knows that it is his/her responsibility to keep apprised of current graduation requirements for a particular degree program.

THE COLLEGE YEAR

The college year has four quarters of approximately eleven weeks each: Fall quarter, latter part of September to Christmas holidays; Winter quarter, first week in January to middle of March; Spring quarter, March to early June; Summer quarter, June to latter part of August. Exact quarter dates appear in the University calendar.

Students may enter the University at the beginning of any quarter. Only one commencement will be held each year, in June.

UNDERGRADUATE AND PROFESSIONAL DEGREES OFFERED BY THE UNIVERSITY

The University will confer degrees upon candidates who have satisfied the prescribed regulations and conditions as follows:

A. *In the College of Arts and Sciences*, the degrees of Bachelor of Arts (A.B.),

Bachelor of Science (B.S.), Bachelor of Science in Chemistry (B.S. Chm.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B. Mus.), Bachelor of Science in Physics (B.S. Pcs.), Bachelor of Science in Physics and Astronomy (B.S. Pcs. & Ast.);

B. *In the College of Agriculture*, the degrees of Bachelor of Science in Agriculture (B.S.A.), Bachelor of Science in Agricultural Engineering (B.S.A.E.), and Bachelor of Science in Environmental Health (B.S.E.H.);

C. *In the School of Law*, the degree of Juris Doctor (J.D.);

D. *In the College of Pharmacy*, the degree of Bachelor of Science in Pharmacy (B.S. Phar.), the degree of Doctor of Pharmacy (Pharm.D.);

E. *In the School of Forest Resources*, the degree of Bachelor of Science in Forest Resources (B.S.F.R.);

F. *In the College of Education*, the degree of Bachelor of Science in Education (B.S.Ed.);

G. *In the College of Business Administration*, the degree of Bachelor of Business Administration (B.B.A.);

H. *In the School of Journalism and Mass Communication*, the degree of Bachelor of Arts in Journalism (A.B.J.);

I. *In the College of Home Economics*, the degree of Bachelor of Science in Home Economics (B.S.H.E.);

J. *In the College of Veterinary Medicine*, the degree of Doctor of Veterinary Medicine (D.V.M.);

K. *In the School of Social Work*, the degree of Bachelor of Social Work (B.S.W.);

L. *In the School of Environmental Design*, the degree of Bachelor of Landscape Architecture (B.L.A.)

STUDIES ABROAD PROGRAM

The University System of Georgia Studies Abroad Program provides foreign study opportunities for serious and selected students of Georgia through charter and group service arrangements available to educational institutions. The following summer language programs are now available: French in Paris, Japanese in Kagoshima, German in Erlangen, Spanish in Segovia, and Latin American Studies at Ibero-American University in Mexico City. There is also a program in Classical Cultures in Rome and Athens. These courses earn "on campus" credit. Additional information may be obtained from the academic department involved.

The University of Georgia sponsors an interdisciplinary study abroad program located in Cortona (Tuscany) Italy. The areas of study are art history, studio arts (ceramics, drawing, painting, printmaking, watercolor, papermaking, graphic design, calligraphy, sculpture, jewelry making), environmental design, drama and theater, and Italian language. The ten-week program offers courses for undergraduate and graduate credit. Contact Marion Bowden, Visual Arts Building, (404) 542-7011.

DUAL DEGREES

A graduate of any program may receive the baccalaureate degree of any other program by completing the additional studies required in that program and by meeting residence requirements for the second baccalaureate degree. The minimum resident requirement is 45 quarter hours. Eligibility for graduation with academic honors does not apply to the second baccalaureate degree.

MILITARY COMMISSIONS

A student who satisfactorily completes the advanced ROTC program may be commissioned as second lieutenant in the U.S. Army or U.S. Air Force in conjunction with the degree. *Detailed information concerning the Army and Air Force ROTC programs may be found under "Division of the Armed Services."*

DEGREE REQUIREMENTS

The Core Curriculum

The core curriculum was established within the University System of Georgia as a means of facilitating the transfer of credit for

students at the lower division level as they work toward baccalaureate degrees within University System colleges and universities. The various institutions within the University System, in establishing their core curricula, provide for (1) 90 quarter credit hours of which a minimum of 60 are in general education and 30 in major related courses; (2) assurances that all courses satisfactorily completed in the core curriculum of any unit of the University System will be acceptable and transferable to other units of the University System; and (3) the preservation of the maximum possible amount of institutional autonomy.

Briefly, the University core curriculum includes:

	HOURS
AREA I HUMANITIES, including, but not limited to, grammar, composition, and literature.	20
AREA II MATHEMATICS AND NATURAL SCIENCE, including, but not limited to, mathematics and a 10-hour sequence of laboratory courses in the biological and physical sciences.	20
AREA III SOCIAL SCIENCE, including, but not limited to, history and American government.	20
AREA IV COURSES RELATED TO MAJOR, appropriate to the program of the individual student.	30

Each school or college of The University of Georgia which offers a baccalaureate degree program has developed its core program and complies with the University System core curriculum requirements. Detailed information is given in the sections for the individual schools and colleges in this bulletin.

Examinations on the Constitutions

Examinations on the Constitution of the United States and that of the state of Georgia are required of all persons receiving a degree from the University, including those transferring Political Science 101 from institutions outside the state unless exempted by courses dealing with these constitutions. Approved courses for exemption are as follows:

Federal Constitution

POL 101
POL 105H
POL 408
POL 465
POL 483
POL 484
HIS 251 and 252
HIS 415E
HIS 253H and 254H

Federal and

Georgia Constitution

POL 101 (taken in Georgia)
POL 105H (taken in Georgia)
POL 465 (taken in Georgia)
HIS 415E and 417M
HIS 417N
HIS 417P

Georgia Constitution

SOS 104
HIS 417M
HIS 417N
HIS 417P
POL 310
POL 480
POL 465 (taken in Georgia)

Examinations are given once each quarter; dates are announced in the *Schedule of Classes*. Students who fail the examination must satisfy the requirement with course-work. No re-examination is permitted.

Examinations on United States and Georgia History

An examination on the history of the United States and Georgia is required of all persons receiving a degree from the University, unless exempted by one of the following courses: HIS 100, 251, 252, 253H, 254H, 417M, 417N, 417P. No re-examination is permitted. Examinations are given to freshmen during orientation and once each quarter to upper classmen. Examination dates are announced in the *Schedule of Classes*.

Regents' Testing Program

Each institution of the University System of Georgia shall assure the other institutions, and the System as a whole, that students obtaining a degree from that institution possess literacy competence, that is, certain minimum skills of reading and writing.

The Regents' Testing Program has been developed to help in the attainment of this goal. The objectives of the Testing Program

are: (1) to provide System-wide information on the status of student competence in the areas of reading and writing; and (2) to provide a uniform means of identifying those students who fail to attain the minimum levels of competence in the areas of reading and writing.

Passing the Regents' Test is defined as having passed all components of the Test by scoring above the cutoff score specified for each component. The Test may be administered either in its entirety or as one or more components depending on the needs of the students. If one component of the Test is passed, that component need not be retaken; this provision is retroactive to all students who have taken the Test in any form since the inception of the program.

The intent of this policy is that passing the Regents' Test occur before the end of the student's sophomore year, that is, before the completion of 105 hours of degree credit. Students who fail the Test must retake and pass the Test. Each institution shall provide an appropriate program of remediation and shall require deficient students to participate in that program prior to retaking the Test.

A student holding a baccalaureate or higher degree from a regionally accredited institution of higher education will not be required to complete the Regents' Test in order to receive a degree from a University System institution.

Revised procedures shall be followed by all students effective January 1, 1980. In order to implement effectively the goals of the Testing Program:

1. Students enrolled in undergraduate degree programs shall pass the Regents' Test as a requirement for graduation. Students, including transfer students and/or readmitted students, may take the Test after they have completed the required basic core English courses. They may be required to take the Test in the quarter after they have earned 45 hours of degree credit if the Test has not been passed previously. Institutions, however, may not delay initial testing beyond the student's having earned the 60th hour of degree credit.
2. All students who have taken and have not passed the Regents' Test during the quarter in which they will have earned 75 hours of degree credit shall take non-degree credit courses in remedial reading and/or remedial writing in each quarter of attendance until they have passed all components of the Test.

- a. No enrolled student required to take a remedial course may retake the Regents' Test until the appropriate course is completed with an "S" grade.
- b. Failure to complete the remedial course(s) satisfactorily will result in a "U" posted on the student's permanent record, prohibiting the student from registering to retake the Regents' Test. Additionally, the remedial course(s) must be repeated each quarter until the Regents' Test requirement is satisfied.
3. Having passed the Regents' Test shall not be a condition of transfer into an institution. All transferring students from within the System shall be subject to all provisions of this policy. Students from institutions outside the System who transfer into a System institution with 60 or more degree credit hours shall take the Test during the initial quarter of enrollment and in subsequent quarters shall be subject to all provisions of this policy.
4. Students whose mother tongue is other than English may be exempted from taking the Regents' Test by the institution provided appropriate local procedures are employed to certify the literacy competence of those students earning a degree.
5. For extraordinary situations, each institution shall develop special procedures for certifying the literacy competence of students. A written description of those procedures shall be submitted to the Chancellor for approval. A record of the action shall be reported by the Chancellor to the Education Committee of the Board of Regents. Such procedures shall include provision for remediation if needed and formal examination prior to certifying competency. Such examination shall equal or exceed the standards of the Regents' Testing Program.
6. Students may request a formal review of their failure on the essay component of the Regents' Test if their essay received at least one passing score among the three scores awarded *and* if they have successfully completed the courses in English composition required by the local institution. This review will be conducted in accordance with Board-approved procedures.
7. Remedial work as required under the above policy shall be in keeping with regulations in satisfaction of federal and state student financial assistance and other such eligibility programs.
8. These regulations shall not prohibit institu-

tions from increasing requirements affecting the Regents' Testing Program, provided such increased requirements are authorized by the Chancellor, and provided further that such requirements are published in the official bulletin of the institution prior to implementation. Such additional requirements shall in no way affect the transfer of students from one institution to another or the readmission of students to University System institutions.

Students' Review Procedures— Regents' Testing Program

1. The review will be initiated at the campus level, with procedural matters to be determined by the institution. The on-campus review, however, will be conducted by the three (3) faculty members designated by the institution as a review panel.
2. The on-campus review panel may (1) sustain, by majority opinion, the essay's failing score, thus terminating the review process, or (2) recommend, by majority opinion, the re-scoring of the essay by the Regents' Testing Program central office. The student will be notified concerning the results of the on-campus review.
3. If the on-campus panel recommends re-scoring of the essay, that recommendation will be transmitted in writing, along with a copy of the essay, to the office of the system Director of the Regents' Testing Program. The Director will utilize the services of three (3) experienced Regents' essay scorers other than those involved in the original scoring procedures for the essay component of the Regents' Test. The decision of this panel on the merits of the essay will be final, thus terminating the review process. The student will be notified through the institution concerning the results of the review.

Regents' Senior Exit Examination

As directed by the Board of Regents, "all senior units of the University System will administer a systemic program designed to evaluate each academic program. This evaluation may involve various approaches appropriate to the program including the testing of graduates." Students are urged to consult their academic deans regarding methodology to be used to satisfy this requirement.

Governor's Intern Program

The Governor's Intern Program provides a

unique academic experience while giving students a practical, firsthand look at agencies in state and local governments. The internships are full-time and last ten weeks. The earning of academic credit, while working on a specific agency project, is essential to a student's participation in the program. The amount of credit and all matters pertaining to that credit are left to the discretion of each student's school. A report is submitted by each intern to the Governor's Intern Program after each project's completion. Upon approval by the staff, the report is filed in the Georgia State Archives for future reference. The length of an internship is equal to that of a quarter's work at The University of Georgia. Applications may be obtained from the Career Planning and Placement Center, Clark Howell Hall.

Division of Developmental Studies

The Division of Developmental Studies offers students an opportunity to develop academic skills which enhance their ability to benefit from higher education. The Developmental Studies Division consists of educational experiences in reading, English, and mathematics; and group experiences in academic planning and academic success strategies. The Developmental Studies faculty and counselors have developed an educational program which allows students to develop beginning at their own ability levels and continuing at their own rates within the three or four quarter time limit established by the Division.

Admissions

Students are referred to the Division by the University's undergraduate admissions office. In order to be considered for admission, a prospective student must possess a minimum high school grade point average of 2.0 and a combined Scholastic Aptitude Test (SAT) score of at least 650. The University's chief academic officer has discretionary authority to grant waivers of the University's normal entrance requirements for admission to this Division.

Curriculum

All students accepted to the Division will be given a series of placement tests. The tests help to determine an individual's level of proficiency in English, math, and reading. Students are then placed into the Developmental Studies course(s) in which they need assistance.

The purposes of Developmental Studies curriculum programs are:

English Program

The overall objective of the English Program is to prepare students to write fluently, correctly, and effectively. English course activities include usage practice, scrutiny of effective models, emulation of cognitive processes of good writers, editing and revising, appropriate diction exercises, and exercises in varying sentence patterns. The English courses are designed to teach students to use details, to show rather than to tell the action, to develop organized structure, to achieve purpose, and to incorporate logical thinking and support through four modes: description, narration, exposition, and argumentation. The four courses which constitute the English Program include DEV 096E, 097E, 098E, 099E.

Mathematics Program

The Mathematics Program seeks to develop the mathematical skills of the students to the point where they can succeed in the regular University mathematics courses and other courses that require elementary mathematical reasoning. Mathematics course objectives include performing the four basic operations with the whole number, decimals, fractions, integers, and radical expressions; solving first and second degree equations; performing the four basic operations with polynomials; and solving systems of equations. The courses included in the Mathematics Program are DEV 096M, 097M, 098M, 099M.

Reading Program

The overall objectives of the Reading Department are to increase the reading proficiency of students and to teach students reading and study skill strategies needed for success in University courses. Four levels of courses, designed to meet the varying developmental needs of students, are offered. Instruction and practice are given in these areas: reading comprehension; reading speed and flexibility; strategies for textbook reading and studying; concentration, note taking, test taking, and other study techniques related to textbook reading; vocabulary development; and techniques for mastering specialized discipline-area terms and concepts.

Instruction is individualized, where appropriate, based on continual diagnosis and assessment of progress. Instruction is also linked to university reading demands, and

courses incorporate an application of reading techniques to university-level materials, to novels, and to supplementary content and news materials.

Upon exit, the student will be able to demonstrate mastery of college entry-level reading comprehension, reading rate, and vocabulary usage skills. Courses included in the Reading Program are DEV 096R, 097R, 098R, 099R.

Counseling Program

The Counseling Program is designed to promote development of those psychological, social, and vocational life skills which facilitate success and achievement in a college setting. The Counseling Program offers a course entitled "Strategies for Academic Success" (DEV 099C), which includes instructions in study and test-taking skills, academic planning, and utilization of campus resources. In addition counselors assess the academic progress of students from their initial contact with Developmental Studies until they leave the program and offer advisement and consultation as needed.

Registration and Course Selection

Developmental Studies students register for courses under the advisement of staff and counselors in accordance with the placement test results. If the test results indicate that a student will be placed in only one or two of the three Developmental Studies courses, then that student may include courses from the University core curriculum in his/her schedule. While enrolled in the Division of Developmental Studies, students will receive credit for core curriculum work completed, but no Developmental Studies course carries graduation credit.

Division Exit Criteria

Students officially exit the Division when they complete the exit criteria for each program (English, reading, mathematics, counseling) to which they have been assigned. To exit a particular program the student must achieve established minimum scores on the Regents' Basic Skills Examination and meet performance criteria established by the program. Students may fulfill each program's exit criteria at the end of any quarter in which they are enrolled.

Transfer to another school or college is possible only after students have exited all Developmental Studies programs. If a student

has attempted more than 20 credit hours, a grade point average of 2.0 is required before a transfer can be completed.

Period of Enrollment

Although students enrolled in the Division of Developmental Studies are normally granted three quarters to complete Developmental Studies requirements and to meet requirements for transfer to a degree-granting program, a fourth quarter may be granted by the Director if this action is determined to be in the best interests of the student. Students who fail to meet the requirements for transfer within the designated period will be dismissed.

University Tutorial: Free one-to-one and group tutorial assistance is offered to all University students by the Division. Trained undergraduate and graduate peer-tutors offer assistance in the following subjects:

English	Computer Science	Biology
French	Chemistry	Psychology
German	Statistics	Economics
Spanish	Physics	History
Accounting	Geography	Mathematics

Assistance with study skill improvement is also offered through University Tutorial.

Basic Physical Education

1. All students entering the University Fall quarter 1977, and thereafter, who matriculate for their first baccalaureate degree are required to pass five hours of basic physical education. This requirement may be satisfied by successful completion of any combination of basic physical education courses, including credits earned by passing proficiency examinations. Basic physical education courses are designated PEB 100-165; courses for physical education majors (PED), health education majors (HED) or recreation majors (REC) will not satisfy the basic requirement. This requirement shall not apply for those entering a second or subsequent bachelor's degree program. The number of credit hours which may be applied toward an undergraduate degree will be determined by individual schools and colleges.
2. All baccalaureate degree candidates who entered the University prior to Fall quarter 1977 are required to satisfy six courses of basic physical education. Students entering the University with ninety hours or more credit will be considered to have met this requirement. Students transferring fewer than ninety hours will exempt one course in basic physical education for each fifteen

hours of credit transferred. A maximum of six credit hours may be applied toward a degree.

The above requirements are applicable to all students except as follows:

1. **Veterans:** Veterans who have served 180 days or more may receive credit for five basic physical education courses at one hour each or, six basic physical education courses at one hour each, depending on date of matriculation. To establish credit, veterans will be required to present a copy of their DD214 form to the Admissions Office.
2. **Handicapped Students:** Adapted physical education classes are available to facilitate the meeting of the University physical education requirement by handicapped students. Policies with regard to physical education for handicapped students are as follows:

The Division of HPER is committed to fulfilling the physical education needs of all students. An adapted physical education program operates as a normal extension of the basic physical education program for students who, because of temporary or permanent handicapping or medical conditions, cannot participate in the mainstream physical education program. It is through this adapted program that, with few exceptions, all students are able to satisfy the basic physical education requirement. Students with health problems or handicaps should consult with the Staff Physician at the University Health Service. Students will in turn be referred to the adapted physical education specialist who works in concert with the University Staff Physician, and subsequently will be placed in appropriate physical education activities.

There are no exceptions to the physical education requirement for reasons of age, sex, handicap or medical disability except upon special recommendation by the Staff Physician at the University Health Service.

Proficiency Testing Program

The basic physical education requirement may be satisfied in whole or in part through successful completion of proficiency examinations. One hour of credit is earned toward the basic requirement for each proficiency examination passed. The proficiency examination includes: (1) a written examination to evaluate knowledge and understanding, and (2) a skill (performance) examination to

evaluate a student's ability to demonstrate specified skills.

Policies regarding this program include: (1) Students may not take a proficiency examination in courses for which they have previously received credit. (2) Students may not be simultaneously enrolled for a proficiency test and an instructional class for the same activity, and (3) Students may take a maximum of two proficiency exams during any one quarter.

Students register for a proficiency examination in the same way as for any other course. Students failing the written or skill examination or who enroll but do not take either the written or skill examination must officially withdraw or a grade of "U" will be recorded.

Medical College of Georgia School of Nursing at Athens (SONAT)

In 1974 a program leading to a baccalaureate degree in nursing was established in Athens; this is a satellite to the regular program of the Medical College of Georgia School of Nursing in Augusta. In order to qualify, students must take 90 quarter hours of pre-nursing core curriculum. This may be completed as a student at The University of Georgia enrolled in Arts and Sciences, Pre-Nursing.

The student will apply to the Medical College of Georgia to take the 90 quarter hours upper division courses in nursing. These classes, which are limited to nursing students, are held on the University campus and are taught by the faculty at the Medical College of Georgia School of Nursing in Athens (SONAT).

SONAT faculty supervise clinical experiences at St. Mary's and Athens General Hospitals, University Student Health Service, Grady Hospital in Atlanta, and a variety of community health agencies.

Registered nurses who have a diploma or associate degree in nursing can obtain a BSN through SONAT.

Students enrolled in the SONAT program have all the rights and privileges of University students and also those of the Medical College of Georgia. Upon graduation from the Medical College of Georgia, students are eligible to take state board examinations for professional nurses.

SONAT offices are located in Athens.

MISCELLANEOUS ACADEMIC REGULATIONS

Units of Credit

The unit of credit is the quarter hour, representing one hour of class work per week for one quarter or its equivalent in other forms of instruction. Two or sometimes three hours of laboratory work are considered as the equivalent of one hour of class work.

Most University courses meet five times a week for one quarter and carry a credit of five quarter hours.

Academic Work Load

The normal academic work load is 15 hours per quarter for undergraduates and 12 hours per quarter for graduate students. In programs requiring more than 180 hours for graduation the load per quarter may be somewhat higher. Undergraduate students carrying fewer than 12 hours per quarter and graduate students carrying fewer than 12 hours per quarter will not be certified as full-time students. Undergraduate and graduate students carrying fewer than six hours per quarter will not be certified as one-half time students.

English

English 101 and 102 (English Composition) are required for all undergraduate degrees from The University of Georgia. A grade of C or better is required for English 101 and an average of 2.0 or better is required for both courses.

Residence

The minimum residence requirement for a baccalaureate degree is 90 quarter hours.

Students who present acceptable college credits earned before September 1960, or who are enrolled for a second baccalaureate degree, may satisfy the residence requirement by completing in residence 45 hours in courses numbered 200 and above with a cumulative average grade of 2.0 or better.

Students enrolled in the combined B.S.-M.D. program with the Medical College of Georgia, or those enrolled in the Dual Degree Program with the Georgia Institute of Technology, may satisfy the residence requirement at the University by completing 45 hours in residence in courses approved by the Dean of the Franklin College of Arts and Sciences.

Independent Study

The Independent Study program is an integral

part of the undergraduate program of the University System of Georgia. As an alternative to traditional education, Independent Study provides flexibility of admission, registration, scheduling, and pattern of study. The content and requirements of each Independent Study course are predetermined, but the time, place, and method of study are decided by the students. Although Independent Study courses are by nature flexible in design, there are regulations which must be observed and requirements which must be met. The quality of education provided through Independent Study must be compatible with the academic community.

Independent Study is open to anyone regardless of previous academic experience. Transcripts of previous college or high school work are not required for registration. Students may register at any time throughout the year and may take several courses simultaneously.

Admission to Independent Study is not admission to The University of Georgia. Courses offered are for non-resident credit. Credits earned through Independent Study are recorded at the University and may be used for degree requirements according to the regulations of the college or university from which the student plans to graduate.

For additional information contact: Independent Study, Georgia Center for Continuing Education, The University of Georgia, Athens, Georgia 30602. Telephone: (404) 542-3243.

University Evening Classes

The Georgia Center for Continuing Education conducts evening credit classes for adult students who attend on a part-time basis. Admission is restricted to qualified applicants whose permanent residence is within commuting distance of Athens or students who will be simultaneously enrolled in regular University classes.

Students receive residence credit for evening classes with no limit on the maximum number of hours which may be applied toward a degree. Present course offerings allow students to obtain about one-half of their total undergraduate degree program during the evenings.

Evening students may register for a maximum of two courses per quarter. Classes generally meet twice a week during the quarter, with each quarter running concurrent with the regular University quarter. Class schedules and other information may be obtained at the Evening Classes Office, Georgia

Extension and Independent Study Credit

The total number of hours that may be earned toward an undergraduate degree at the University by either extension or independent study or both shall not exceed one fourth of the hours required for graduation.

Military or Extra-Institutional Experience and Credit

Credit may be granted in certain subject areas for satisfactory completion of the College Level Examination Program (CLEP) Tests. Students with prior credit in the field or a related field of the subject area involved will not be granted credit. The University administers these tests through the Testing and Evaluation Center. In general, they are also administered by the education officer on military posts or by centers established by the College Board, of which the University is one.

United States Armed Forces Institute (USAFI) courses are not recognized by the University unless they are completed through an accredited institution which grants recognized college credit for same. Such courses are regular correspondence courses and are administered under the Cooperating College Program of USAFI.

Inquiries concerning in-service training should be directed to the Director of Admissions. Evaluations of this training will not be made until such time as the student is accepted for study on the University campus.

Classification of Students

In the undergraduate schools and colleges, students will be classified according to the number of academic quarter hours they have earned.

<i>Classification</i>	<i>Hours earned</i>
Freshman	Less than 45 hours
Sophomore	At least 45 hours
Junior	At least 90 hours
Senior	At least 135 hours

Junior Division and Senior Division

Some of the undergraduate schools and colleges further classify their students as junior division students or senior division students. In general, a junior division student is a freshman or sophomore; a senior division student is a junior or senior, and has completed at least 90 academic hours.

Law or honors students may enroll in graduate courses with the approval of their advisor, the course instructor, the graduate coordinator of the department in which the course is offered, and the Graduate Dean. Approval must be secured prior to registering for the course. Appropriate applications are available in the Honors Office and in the Law School.

Grading System

The grading system for The University of Georgia is as follows:

- A** Excellent
- B** Good
- C** Satisfactory
- D** Passing
- F** Failure
- WF** Withdrew, failing
- I** Incomplete. This symbol indicates that a student was doing satisfactory work but, for non-academic reasons beyond his/her control, was unable to meet the full requirements of the course. If an I is not satisfactorily removed after three quarters of residence, the symbol I will be changed to the grade F by the appropriate official.
- W** This symbol indicates that a student was permitted to withdraw without penalty. Withdrawals without penalty will not be permitted after the midpoint of the quarter (date to be specified in the *Schedule of Classes*) except in cases of hardship as determined by the appropriate official.
- WF** This grade indicates that the student was permitted to withdraw from the course while doing unsatisfactory work. Withdrawal from a course under these circumstances is equivalent to a failure. This grade is included in the academic average.
- S** This symbol indicates satisfactory participation in certain required courses. Normally S grades are given in a limited number of professional, seminar, or graduate-level courses. Credit is included in hours earned. The grade is not included in the academic average.
- U** This symbol indicates unsatisfactory performance in certain required courses in which S grades may normally be given. No credit is given. The grade is not included in the academic average.
- V** This symbol indicates an audit. No credit is given. The grade is not included in the academic average.
- K** This symbol indicates that a student

was given credit for the course via a credit by examination program approved by the faculty, e.g., CLEP, AP, Proficiency, etc.

ER This symbol indicates an error in reporting. See your dean.

Cumulative grade average is based on all residence hours attempted at the University exclusive of S and U grades.

Conversion of Letter Grades to Grade Points

For purposes of computing grade point averages, letter grades are converted into numerical equivalents:

A	4.0	I	*
B	3.0	S	*
C	2.0	U	*
D	1.0	V	*
F	0	K	*
WF	0	W	*

*Not computed

Grade Reports

Quarterly reports of grades will be mailed directly to students at their permanent address.

Grades

A minimum cumulative average of 2.0 is required to meet all undergraduate graduation requirements.

Change in Grades

A grade in a course recorded by the Registrar cannot be changed except in the following circumstances:

A symbol of I not removed after three quarters in residence becomes an F.

A symbol of ER not removed after one quarter becomes a grade of WF.

Any grade will be changed upon a written statement by the instructor that the grade was a factual error. All grade changes are subject to approval by the instructor's department head and the Dean's Office.

Baccalaureate degree candidates who make a grade of F or D in their senior year in a course numbered 200 or above necessary for their degree will have the privilege of one re-examination, provided there is not opportunity to repeat the course. Eligibility for re-examination is determined by and permits should be obtained from the student's academic dean. Grades in not more than two courses may be thus changed.

Course Numbers

Courses numbered from 1 to 99 are either non-credit or remedial courses; those from 100 to 199 are designed for freshman and sophomore (junior division) students; those numbered 200 to 299 are mainly sophomore courses but, in special instances when justified by course and curricular requirements, may be given senior division (junior and senior) classification. Courses numbered 300 to 399 are generally designed for mixtures of junior and senior level students. Courses taken by juniors and seniors along with graduate students carry the numbers 400 to 599 for undergraduates and 600 to 799 for graduate students. Courses numbered 800 or 900 are open only to graduate students. Courses which carry an H suffix are Honors courses.

Changes in Courses

It is the responsibility of students to select the appropriate courses for their degree program. If students are uncertain as to their degree requirements, they should consult with their academic advisor/dean prior to scheduling.

Students are expected to attend classes on a regular basis during the drop/add period. A student who incurs an excessive number of absences may be withdrawn from the class at the discretion of the professor.

Changes in a student's program of courses may be made only with the approval of the dean of the college or school in which the student is registered. If students find it necessary to make adjustments in their class schedules following registration, they must follow the procedures and adhere to the deadlines and dates published in the *Schedule of Classes*.

Fee Adjustments—Tuition is charged on a per quarter hour basis for up to 12 hours. Full tuition is charged for 12 or more quarter hours. If a schedule change results in an additional fee being due, the student should report to the Treasurer's Office to pay additional fees. No academic credit will be given unless all fees are paid by the end of the drop/add period.

Withdrawal From Courses

Students may not withdraw from a course without the permission of the dean of their college or school. Veterans receiving benefits must notify the Office of Veterans Affairs of course load reductions.

The procedure for withdrawing from a course is initiated in the office of the student's advisor or the dean of the college, except in

cases where the instructor wishes to withdraw with a grade of WF a student who has had excessive absences.

A grade of W signifies that the student was passing the course at the time of withdrawal. Such a grade, even if the course was withdrawn from for medical reasons, does not relieve the student from the regular probation and exclusion rules. See "Academic Probation and Dismissal."

An undergraduate student who withdraws from a course prior to the midpoint of a quarter is assigned a grade of W or WF by the instructor. A student who withdraws after the midpoint of the quarter (date to be specified in the *Schedule of Classes*) is assigned a grade of WF, except in those cases in which the student is doing satisfactory work and the withdrawal is recommended by the Office of Student Affairs because of emergency or health reasons.

Auditing Courses

Students may audit courses with the approval of their academic dean and the department offering the course. The registration procedure is the same as registration for credit except that the auditor must request audit status at the time of registration.

Fees for auditors are the same as those for students registered for credit. After the drop/add period, credit registrations may not be changed to audit, and audit registrations may not be changed to credit registration.

Course Challenging

Insofar as accrediting policies permit, the University allows a student the opportunity to receive resident credit for courses by examination without attending the regular classes. Although specific standards of eligibility for challenging a course vary somewhat among the schools and colleges, in general the student must (1) demonstrate to the department in which the course is offered evidence of independent study to master the materials required in the course; (2) not be currently enrolled in the course to be challenged, nor have previously completed the course. Upon completion of the course challenge the instructor will complete and file an official Course Challenge Form with the Registrar of the University.

Based upon the results of the examination, regular grades of A, B, C, D, or F are assigned for the challenged course.

Some courses cannot be challenged. A student should check with the dean or depart-

ment head regarding the procedure for challenge within a particular school/college.

Admission to Course Examinations

Students who have not registered for the course will not be admitted to the final examination, and only under extraordinary circumstances will they be admitted to the examination unless they have attended at least 50 percent of the total class and laboratory exercises held in the course.

Forfeiture of Credit

By registering for and receiving a grade in a course for which credit hours have already been granted, either by work at the University or by transfer, a student forfeits the previous credits in that course.

Class Attendance

Students are expected to attend classes regularly. A student who incurs an excessive number of absences may be withdrawn (WF) from a class at the discretion of the professor.

Withdrawal from the University

No student is permitted to withdraw after registration for a term without notifying the Office of Student Affairs, who shall notify the proper University officials. Veterans receiving allowances under acts of Congress must notify the Office of Veterans Affairs. Refunds will be based on the date of such notification.

A student against whom disciplinary charges are pending will not be permitted to withdraw from the University with a clear record until such charges shall have been resolved.

In general, a student voluntarily withdrawing may return later if scholastically eligible.

Name Changes

The name carried on the permanent academic record is the name given on the application for admission and should be the complete legal name. The name will be changed by the Registrar upon request to reflect changes in marital status or legal name changes of currently enrolled students. The name on inactive records will be the name under which the student was last enrolled.

Academic Advisement

The advisor's major role is to assist students in the planning and implementation of their program of study. The advisor will meet with the

student and together they will plan the student's course of study. The advisor will, to the best of his/her professional judgement, assist the student in making certain that all educational requirements of the University and the student's program are met. However, because of frequent changes in course offerings and state certification requirements, the advisor cannot provide a guarantee of graduation and/or certification within a specified period of time.

Students placed on probation should seek the assistance of their academic advisor as soon as possible. Those with poor scholastic records are advised that unless their record improves markedly in the following quarter, they should withdraw from the University to avoid compiling a poor record.

Admission to Another College or School

A student on probation or on first exclusion in one college or school within the University may not transfer to another college or school without the consent of the dean of the college to which admission is sought.

Academic Probation

University-wide regulations provide that students are placed on academic probation at the end of any quarter in which their cumulative grade point average is below 2.0. Students may remove themselves from academic probation by achieving a 2.0 cumulative average. Transfer credits are not included in the computation of the cumulative grade average.

Some schools and colleges within the University maintain academic standards specific to their degree requirements which may exceed University regulations. Students who fall below such standards should contact immediately the appropriate administrator in their respective dean's office for academic counseling and program evaluation.

Academic Dismissal

1. Students whose first matriculation at The University of Georgia occurred *prior* to the Summer Quarter, 1980, will be subject to academic dismissal based upon the following standards:

Students who have been enrolled for three or more quarters are dismissed from the University if their cumulative average is below that required for the designated number of total hours attempted, as follows:

<i>Hours Attempted</i>	<i>Required Minimum Cumulative Average</i>
3-44	1.5
45-89	1.6
90-134	1.7
135-179	1.8
180-239	1.9
240 or more	2.0

Students will not be subject to dismissal from the University for academic deficiencies until they have been enrolled for three or more quarters. Students will be considered enrolled for any quarter in which they received a grade or grades other than a W.

Students will not be dismissed from the University for academic reasons if they earned an average of 2.3 or higher on all hours attempted for the last quarter in residence, provided they were enrolled for a minimum of 10 hours for that quarter.

2. Students whose first matriculation at The University of Georgia occurred during the Summer quarter, 1980, or thereafter, will be subject to academic dismissal according to the following standards:

Students will be dismissed from the University after two successive quarters on probation if their cumulative average is below that required for a designated number of total hours attempted, as follows:

<i>Hours Attempted</i>	<i>Required Minimum Cumulative Average</i>
0-30	1.6
31-59	1.7
60-89	1.8
90-119	1.9
120 and above	2.0

Students will be considered enrolled for any quarter in which they received a grade or grades other than W.

Students will not be subject to dismissal for academic reasons if they meet the standards listed above at the end of two quarters of probation or if they carry a minimum of 10 hours and maintain a quarterly average of 2.3.

Total hours attempted consist of all hours attempted at the University (including all hours with grades of F and WF), plus all hours transferred to the University. Grades of I and W are not included in hours attempted.

Upon receiving a first dismissal, a student will be suspended from the University for a minimum of two quarters. At the end of the suspension, readmission may be granted at

the discretion of the academic dean.

After a second dismissal, only through appeal to the University Educational Affairs Committee can permission to return to the University be granted. A minimum of one calendar year must elapse before a student on second dismissal may petition for readmission.

Graduation

Candidates for degrees must show that they have met all general University requirements for such matters as registration and payment of fees and special requirements of the college or school in which they have been registered.

All candidates for undergraduate and professional degrees must file an application for graduation with the Registrar during the *first* quarter of their senior year. Students who fail to perform this duty will forfeit any equity in the adjustment of errors or omissions made in their programs or graduating on schedule.

Independent Study grades and grade changes of last quarter seniors must be received by the registrar one calendar month prior to their graduation date. Students who register for their final quarter's work at another institution must delay their graduation date by one quarter to allow sufficient time for the Registrar's Office to receive, evaluate, and record such credits to their academic record.

The University holds one formal commencement each June. All students graduating during the academic year are invited to participate.

All diplomas are mailed following graduation each quarter. Graduating students are responsible for maintaining a current permanent home address with the Registrar's Office to ensure the accurate mailing of their diploma.

The University reserves the right to withhold the diploma of any student who has completed all academic requirements when disciplinary charges are pending or when there is a pending disciplinary action equivalent to suspension or expulsion.

PROGRAMS FOR SUPERIOR STUDENTS

Programs for superior students at The University of Georgia consist of the Advanced Placement Program and the Honors Program.

Both programs are headed by a director under the office of the Vice President for

Academic Affairs and the University Council for Superior Students. Inquiries concerning the Advanced Placement Program and the Honors Program should be directed to the Director of Programs for Superior Students, The University of Georgia, Athens, Georgia 30602, Telephone (404) 542-3240.

Advanced Placement Program

The purpose of the Advanced Placement Program staff is to coordinate and supervise all advanced placement activities instituted by The University of Georgia and to provide liaison among the various University units in matters concerning both advanced placement and credit by exemption in basic courses.

Generally, advanced placement tests are given to new students during summer orientation sessions prior to Fall enrollment. Several sessions are especially planned for superior students and provide coordinated placement testing and academic counseling, followed by early class registration for Fall quarter. Students invited to these sessions are urged to attend, as limited time during Fall registration does not permit the same intensive testing and counseling procedure.

In addition to its own Advanced Placement Program, the University also participates in the Advanced Placement Program of the College Board. Students making a good score on the College Board program are given, on the recommendation of the respective department, advanced placement and credit in all fields.

The University also grants exemption and credit on the basis of the College Board achievement scores in foreign languages, mathematics, biology, physics, chemistry, English, American and European history.

Students planning to enroll at The University of Georgia who took the College Board Achievement Tests and/or participated in the special Advanced Placement Program of the College Board should request that the College Board testing center submit their scores to the Director of Admissions, The University of Georgia, Athens, Georgia 30602.

The Honors Program

The primary goals of the Honors Program are to provide superior undergraduate students with individualized intellectual opportunities designed to maximize their learning potential: smaller, enriched classes; direct and personal contact with top faculty members; greater curriculum flexibility; and the ability to strike out on their own in intellectual pursuits.

Although most Honors courses and other instructional services are offered in the College of Arts and Sciences and in the College of Business Administration, the Honors Program is open to all students in the University who qualify for Honors admission.

The following colleges and schools have designated coordinators of Honors work, who may be contacted for additional information concerning the Honors Program in their respective disciplines: Agriculture, Arts and Sciences, Business Administration, Education, Environmental Design, Forest Resources, Home Economics, Journalism, Pharmacy, Social Work, and Veterinary Medicine.

ACADEMIC HONORS

Graduation With Honors

The University awards degrees with honors to candidates who meet specified standards of academic excellence. In order to be considered for a degree with honors, a student must meet the following requirements:

1. Graduating seniors whose first matriculation at The University of Georgia occurred in September 1977 or thereafter will be recommended for graduation with honors on the basis of their cumulative grade point average for all four years of college work. For native students at The University of Georgia, this will mean simply that the total grade point average will be used in establishing eligibility for graduation with honors. For transfer students, the grade point average for the ninety hours or more of work taken at The University of Georgia will be averaged with their official transfer average on all college courses attempted. Respective standards will be as follows:

Summa cum laude	3.90
Magna cum laude	3.70
Cum laude	3.50

To qualify for honors graduation, a student must have earned a minimum of 90 quarter hours in residence. Honors eligibility regulations apply to all first baccalaureate degree candidates.

2. Graduating seniors whose first matriculation at The University of Georgia occurred between September 1975 and Summer 1977 will be recommended for graduation with honors on the basis of their cumulative grade point average for all four years of college work. For native students at The University of Georgia, this will mean simply that the total grade point average will be

used in establishing eligibility for graduation with honors. For transfer students, the grade point average for the ninety hours or more of work completed at The University of Georgia will be averaged with their official transfer average on all college courses attempted. Respective standards will be as follows:

Summa cum laude	3.90
Magna cum laude	3.60
Cum laude	3.30

To qualify for honors graduation, a student must have earned a minimum of 90 quarter hours in residence. Honors eligibility regulations apply to all first baccalaureate degree candidates.

3. Graduating seniors whose first matriculation at The University of Georgia occurred prior to September 1975 will be recommended for graduation with honors on the basis of the grade point average and scholastic standards in effect at the time they first matriculated as listed in the 1973-75 and 1975-77 University Bulletin.

- a. Minimum of 90 quarter hours in residence after reaching junior classification.
- b. Based on all credit attempted in the quarter in which hours attempted equal a minimum of 90.
- c. All hours attempted in the final quarter before graduation included.
- d. Respective standards as follows:

Summa cum laude	3.90
Magna cum laude	3.60
Cum laude	3.30

In order to qualify for honors graduation, a student must have a minimum of 75 quarter hours in which a letter grade (A,B,C,D, or F) was assigned.

First Honor Graduate

Beginning with the August, 1977 graduating class, each student graduating with a cumulative grade point average of 4.0 will be designated a First Honor Graduate.

Deans' List

The University encourages excellence in scholarship and gives official recognition to students whose work is superior by publishing deans' lists from each school or college at the end of each quarter. Deans' lists include all students who have, during the preceding quarter, made an average of 3.60 or higher, carried a load of at least 12 hours, and received no grades less than B and no incomplete (I) grades.

Honor Fraternities and Societies

Several honor fraternities and societies at the University extend recognition to students on the basis of scholarship and good character. There are chapters of Phi Beta Kappa, Sigma Xi, Phi Kappa Phi, and many college, school, and departmental honor societies.

Honors Day

Honors Day was introduced to give public recognition to students who achieve high scholastic records. Undergraduate students who are in the first five percent of their classes, based on cumulative grade point averages, are included in the Honors Day program.

ACADEMIC HONESTY

Academic integrity is an adherence to a high standard of values regarding life and work in an academic community. Pursuit of knowledge and the creation of an atmosphere conducive to learning are both definite aspects of academic integrity, but its basis lies in the standard of honesty.

Students at The University of Georgia are responsible for maintaining and adhering to the strictest standards of honesty and integrity in every aspect of their lives. Honesty in academic matters is a large part of this obligation. Specific regulations governing student academic conduct are contained in the *Student Handbook* and these should be read to avoid any misunderstanding.

Students and faculty who suspect that an act of academic dishonesty has taken place should contact the Office of Judicial Programs. A staff member from this office will assist in investigating the incident, and, if appropriate, presenting the matter in a judiciary or administrative hearing.

ACADEMIC RECORDS

The University of Georgia guarantees all students, regardless of age, who are or have been in attendance at the University the right of access to inspect and review any and all official records, files, documents, and other materials created during the period of enrollment which relate directly to them, subject only to certain specific exceptions. With other limited exceptions, no personally identifiable information from the education records of a student will be disclosed to any third party by any official or employee of the University without the written consent of the student.

All students are guaranteed an opportunity to challenge the accuracy of information contained in any file or record to which they may have access, including the right to a hearing if so requested. Students also have the right to file a complaint directly with the U.S. Department of Education whenever they believe that the rights afforded them by the University policy or the Family Educational Rights and Privacy Act have been violated.

Copies of the complete University Policy Statement on Student Education Records may be obtained at the Registrar's Office, the Office of Judicial Programs, and the Office of the Vice President for Academic Affairs.

STUDENT SERVICES

STUDENT AFFAIRS

The University of Georgia and the Office of Student Affairs assume that students are responsible for their conduct, their participation in the educational opportunities of the University, and the control of their private lives. Institutional policies, regulations, procedures, programs, and services reflect this attitude and philosophy. The Office of Student Affairs of The University of Georgia provides services and programs that help students adjust to, understand, evaluate, and utilize available academic resources; plan, prepare for, and pursue their life work; learn to know, live with, appreciate, and enjoy others in harmony and with fulfillment and mutual respect; and maintain mental and physical health and strength as they integrate personal, professional, and social values.

OFFICE OF THE VICE PRESIDENT FOR STUDENT AFFAIRS

The Office of the Vice President for Student Affairs is a focal point for student concerns in an effort to make the educational experience as meaningful as possible. Staff members work to maintain and improve communications and cooperation among students, faculty, and administrators and offer students general advisement, referrals, and information. Leadership, coordination, and budgetary supervision for the Division of Student Affairs are provided by the Vice President.

The Office of Student Affairs provides many programs and services designed to enhance a student's educational experience at The University of Georgia. Departmental staff members work directly with students and other members of the University community to make these services available. The Vice

President for Student Affairs has administrative responsibility for the following eleven departments: Admissions, Administrative Data Processing, Career Planning and Placement, Counseling and Testing, Health Service, Housing, International Services and Programs, Judicial Programs, Registrar, Student Activities, and Student Financial Aid.

The Student Affairs Office collaborates with the College of Education in the training of graduate practicum students and is the liaison between the Campus Ministry Association and the University community. Handicapped Student Services and the National Student Exchange Program are also administered through this office.

UNDERGRADUATE ADMISSIONS AND ORIENTATION

The Admissions Office processes and reviews applications for undergraduate freshman and transfer admission and readmission. This office also coordinates the orientation programs for all new undergraduate students. Admissions counselors are available to talk with currently enrolled students about transferring college credits received at another college or university.

HOUSING

Residence Halls

General Information

Approximately 6,300 students are housed in 16 residence halls, geographically and administratively divided into two residential areas—the Georgian and the Colonial Residence Halls—on The University of Georgia campus. These residential communities are designed for comfortable living, optimal convenience, and a positive contribution to the

educational experience of the residents. Each residence hall features a modern, comfortable environment in which all residents can benefit and take pride. Physical facilities are offered with various living options. Within each residential area, attractive lounges, study and meeting areas, TV rooms, coin-operated laundromats, recreational facilities, and mail facilities are provided. Rooms are furnished with single beds, chests of drawers, desks, chairs, and private telephones. Bath facilities are centrally located and shared by students on each floor. The combination of physical facilities, staff, and student interest contributes to a stimulating environment in University housing.

Through the residence hall living units, students have an opportunity to participate in social, educational, and recreational programs and activities designed to enhance their personal, scholastic, and social development.

Housing Contract and Application

Applications for residence halls are mailed to freshmen with their official notices of acceptance and to new senior division students on request. The application and housing deposit must be returned to the Housing Office in accordance with the accompanying instructions.

The residence hall contract is for the academic year. All students are urged to be familiar with the terms and conditions of the contract prior to signing. Although binding for the Fall, Winter, and Spring quarters, provisions are made for mid-year terminations required by academic course programs such as student teaching, internships, and co-ops.

To apply for housing accommodations, applicants must submit an application and \$50 deposit to the Department of University Housing. This deposit, which serves as a combination room reservation/damage/clearance deposit, will be refunded after official check-out if the housing contract and all financial obligations are fulfilled.

Students who decide not to enroll at the University after making application for housing may cancel their application and may be eligible for a refund of a portion of the deposit according to the terms of the application and/or contract.

Housing Assignment

Residence hall assignments are made based on the date the completed housing application and deposit are received in the University Housing Office. Students will receive their academic year contracts and notifications of hall assignments approximately two weeks to

one month prior to the quarter for which application has been made. A signed residence hall contract, accompanied by a check for the rest for the first quarter, should be forwarded to the University Housing Office by the date specified on the contract.

Every effort is made to honor hall, roommate, and visitation preferences as space permits. Roommate preference will be honored if: both applicants request each other in writing and indicate on their applications a higher priority for roommate than hall preference; both initial applications are received by the Housing Office in the same envelope; and a double room vacancy exists. Students who do not state a preference for a specific person as a roommate will be assigned a roommate without regard to race, color, creed, religion, or national origin. At the time of check-in to their assigned residence halls, students will be notified of their specific room assignments.

Rental Rates

The regular quarterly room rent does not include housing rates for housing between quarter breaks. The University reserves the right to charge extra rent when housing is provided during such times and to make changes in fees and other charges at the beginning of any quarter without previous notice.

Opening and Closing of Residence Halls

University residence halls open at 10:00 a.m. on the day prior to the first day of registration and close at 10:00 a.m. on the day after the last officially scheduled examination. Non-graduating residents may remain in the halls at the end of the quarter for 12 hours after their last scheduled examination or until 10:00 a.m. on the day after the last officially scheduled examination as per the official University calendar, whichever is earlier. Room accommodations will be provided graduating seniors until immediately following graduation exercises. During official holidays within a quarter and between quarter breaks, the University reserves the right to close certain halls and require students electing to remain on campus to move temporarily to another hall.

Responsibility for Property

Resident students are held responsible for any damages to their rooms and furnishings. Damages will be assessed by the University and the student billed for repairs or replacements. Students should inform University officials of any damages which exist at the time they occupy their rooms.

Although precaution is taken to maintain adequate security, the University cannot assume responsibility for loss or damage to student possessions. Students or their parents are encouraged to carry appropriate insurance to cover such losses.

Family Housing

Applications may be obtained from the Family Housing Office. To qualify as and to continue to be a resident, students must be married, or be single students with one or more dependents occupying the apartment at least 20 days per month. Either husband, wife, or single parent must be registered at The University of Georgia, Athens campus, for the quarter that housing is requested. Graduate students must be enrolled for a minimum of 5 hours; undergraduate students for 12 hours. Post Doctoral students and faculty members are not eligible for assignment.

Assignment

Assignments are made from a waiting list established according to the date applications are received in the Family Housing Office with a \$55.00 security deposit.

Deposits and Refunds

A security deposit of \$55.00 is required with the application. The full \$55.00 will be refunded if the application is canceled before an assignment is offered, or at the end of occupancy less any necessary deductions. The University reserves the right to use all or any part of the deposit to defray cost of cleaning the unit, repair of damages, or replacement of equipment, or payment of any unpaid Family Housing bills.

Off-Campus Housing

The Off-Campus Housing office, located in the Central Housing Office, Russell Hall, provides a listing referral service to students and property owners.

Rental property is listed for landlords who agree not to discriminate against prospective tenants on the basis of race, color, creed, sex, or national origin.

Listings are updated monthly and may be picked up at the Housing Office. Due to the frequent changes in the listing, lists are not mailed to inquirers.

The Housing Office does not make rental reservations or negotiate directly with householders in behalf of prospective tenants.

Information

For residence halls and general information:
Department of University Housing
(404) 542-1421
Russell Hall
The University of Georgia
Athens, Georgia 30602

For on-campus family housing:
Student Family Housing Office
(404) 542-1473
710 East Campus Road
The University of Georgia
Athens, Georgia 30602

For off-campus housing:
Off-Campus Housing Office
(404) 542-1421
Russell Hall
The University of Georgia
Athens, Georgia 30602

COUNSELING AND TESTING CENTER

The Counseling and Testing Center, located in Clark Howell Hall, provides a wide range of services to the University community including personal and career counseling, group programs and workshops, career exploration services, study skills assistance, services for nontraditional students, consultation/outreach services, national and University-wide test administration, and test scoring and analysis.

Counseling Services

The Center is staffed by professional counselors and psychologists specifically trained to work in a college setting. Individual, couple, and group counseling services are available to help students constructively deal with any personal, career, or educational concern. All counseling services are available at no charge and are provided on a confidential basis. The Center is open 8:00 a.m. — 5:00 p.m., Monday through Friday. Appointments can be made in person or by calling 542-3183. Drop-in counseling is available from 1:00 p.m. — 3:00 p.m. daily.

Each quarter the Center offers a variety of group programs and workshops on such topics as assertiveness training, self-confidence, relationship skills, stress and anxiety, self-hypnosis and decision making. These workshops usually have 7-12 participants and meet once a week for 4-6 weeks.

Comprehensive career exploration services are available for help in choosing a major and

in making effective educational and career-related decisions. Services include numerous career exploration groups offered each quarter; SIGI, a comprehensive Career Library with information on thousands of careers; a series of taped interviews which provide an overview of each of UGA's academic programs and majors; a computerized career information system; and in conjunction with career counseling, interest and personality testing.

Study skills assistance is available through group programs, workshops, and CASSI, a computer assisted study skills program. Topics covered include test taking, reading and memory improvement, time management, note taking, procrastination, and much more. Services designed to meet the needs of adult students returning to school are also provided. Outreach services are available to students, faculty, and staff who are interested in having Center staff present a program or workshop to their group (i.e., residence hall, class, fraternity or sorority, club, or agency).

Testing Services

The Counseling and Testing Center is responsible for the administration of all University-wide testing programs. These include the Regents' Testing Program (Rising Junior Examination), U.S. and Georgia Constitution and History Examinations, Freshmen Orientation Testing, proficiency and entrance tests for many of the schools and colleges, and advanced placement tests. Test dates and registration instructions for these programs are included in the *Schedule of Classes* each quarter, or may be obtained by contacting the Center.

The Center also serves as a site for the administration of numerous national testing programs. Examples include the GRE, GMAT, MAT, CLEP, LSAT, NTE, and the ACT Program. Information packets for these and other programs can be picked up at the Center. Additionally, test scoring and analysis services are provided for students, faculty, and campus and community agencies.

UNIVERSITY HEALTH SERVICE

Students *must* complete and return the health form included in the admissions packet to the University Health Service prior to arrival on campus. Students with special problems or handicaps should also have their physicians advise the Health Service of any anticipated

needs or medical requests prior to their arrival on campus.

The University Health Service provides primary health care to students of The University of Georgia. The Health Service, housed in a modern facility which includes a 36-bed hospital, recognized by the Joint Commission of Accreditation of Hospitals, provides quality inpatient and outpatient care in both the Physical Health and Mental Health Divisions. The total health care delivery system is designed to meet the medical needs of college students.

During regular academic sessions of the University, the Health Service is open 24 hours daily. Walk-in Clinic hours are from 8:00 a.m.-8:00 p.m. Monday through Thursday, 8:00 a.m.-5:00 p.m. on Friday, and on Saturday from 9:00-11:30 a.m. The Health Service pharmacy is open during these same clinic hours so that patients can conveniently purchase health care items and medication. Students are encouraged to schedule appointments with the clinics whenever possible to minimize waiting time. At times other than regular clinic hours, the Treatment Room, staffed by a registered nurse with a physician and a mental health professional on call, provides immediate care for emergencies. Additional clinics are specially scheduled to treat dermatology, hypertension, weight control and diet, and allergy or immunization problems. The gynecology clinic provides specialized care to female students.

Clinic hours in the Mental Health Division are Monday through Friday from 9:00 a.m.-12:00 p.m. and from 1:00-5:00 p.m. A limited evening and night clinic is also available. The Mental Health staff consists of a professional team of psychiatrists, psychologists, marriage and family therapists, and a social worker. They assist students through individual or group therapy, family and marriage counseling, and vocational and educational guidance.

The prepaid student health fee entitles students to quality health care during the regular academic sessions. However, a fee-for-service schedule will be in effect during quarter breaks. An optional prepayment fee for quarter breaks is also available so that essentially it is possible to obtain a year-round fee. The fee-for-service schedule is applicable for student spouses and for students who otherwise may be fee-exempt. The health fee supports an excellent staff of health professionals: physicians, physicians' assistants, nurse practitioners, registered nurses, physical therapists, radiologists, laboratory and pharmacy personnel, and a team of mental health

professionals. The health fees also support the hospital facility where students may stay as inpatients for 7 consecutive days per quarter or up to 21 days per year at no additional charge.

Supplemental student insurance is made available by the University to provide accident and sickness coverage. This policy has been designed to meet the needs of students and families at a minimum cost. Students may enroll in this plan at the beginning of the school year or at the beginning of each quarter for the remainder of the year.

The Health Service provides a preventive and emergency dental clinic which operates on a subscription basis, entitling subscribers to regular dental examinations, cleaning, and X-ray. Students requiring extensive care or oral surgery will be referred to local dentists or oral surgeons. The goal of the clinic is to encourage students to understand more about disease prevention and oral hygiene.

A health education office is headed by a professional in the field of health maintenance and self-health care. For the benefit and education of student groups, the health educator has developed special educational programs on a variety of health related topics. Time is available for private consultation as well as for specific program requests. The health educator also acts as Health Service liaison between campus committees, student groups, and residence halls. Generally, the health education program encourages student health by increasing health awareness and teaching responsibility for personal health and well-being.

Medical information contained in student medical records—both in Physical Health and Mental Health Divisions—is strictly confidential and may not be released without express written permission from the patient or upon court order.

STUDENT FINANCIAL AID

Student financial aid is the assistance available to help students meet the difference between what they can afford to pay and what it actually costs to attend The University of Georgia. The amount a student and family can afford to contribute will be determined by The University of Georgia's Office of Student Financial Aid, employing a uniform need analysis system in accordance with federal guidelines.

The process of establishing the amount of eligibility for financial assistance for a student is based on two major components: cost of

education (reasonable comprehensive costs for an enrollment period), and total family contribution (as determined by a need analysis system).

Beginning in 1984-85, The University of Georgia will utilize the Application for Federal Student Aid to determine total family contribution.

Types of Aid Available

Student financial aid generally can be classified into three different types of assistance. Eligible students may receive one, or a combination of the types of aid, depending upon the extent of established financial need, courses of study, and personal preference.

- 1) *Scholarships, Grants, Entitlements.* This type of assistance does not have to be repaid.
- 2) *Loans.* This type of assistance must be repaid in accordance with specific program regulations. Some loans may be repaid through service.
- 3) *Employment.* This type of assistance allows students to earn part of their educational expenses by working part-time on The University of Georgia campus.

To Apply For Student Financial Aid

All students who are accepted for admission to The University of Georgia will receive a brochure from the Office of Student Financial Aid. It contains a postcard that students may use to request the appropriate applications.

In 1984-85, undergraduates who are Georgia residents should complete The University of Georgia Financial Aid Application, the Application for Federal Student Aid, and the Georgia Student Grant Application.

Undergraduates who are residents of another state should complete The University of Georgia Financial Aid Application and the Application for Federal Student Aid.

In addition to the forms above, every student who has attended a college, university, vocational-technical school, proprietary school, or any other post-secondary institution, other than The University of Georgia, must have a Financial Aid Transcript completed by each of those institutions.

Eligibility Requirements

To be considered for student financial aid a student must:

- 1) be a United States citizen or permanent resident of the United States; and,
- 2) have been accepted for admission to an approved degree-seeking program by the

Office of Undergraduate Admissions or the Office of Graduate Admissions; or be currently enrolled in an approved degree-seeking program; and,

- 3) not be in default on a National Direct Student Loan or Guaranteed Student Loan received while attending The University of Georgia; and,
- 4) not owe a refund on a Pell Grant or Supplemental Educational Opportunity Grant received while attending The University of Georgia.

In addition to the above requirements, a student must be making satisfactory academic progress towards degree completion to receive aid. Briefly stated, undergraduate students are considered to be making satisfactory academic progress if they:

- 1) meet the standards outlined in The University of Georgia Undergraduate *Bulletin* regarding Academic Dismissal, and
- 2) complete requirements for a degree in a "normal time frame" as specified below:
 - (a) total number of quarters of full-time enrollment (12 hours or more) should not exceed 15 quarters for a four-year degree, or
 - (b) total number of quarters of part-time enrollment (less than 12 hours) should not exceed 15 quarters for a four-year degree.

Every student who receives aid will receive a copy of the University's satisfactory academic progress standards.

When to Apply

Forms normally require a minimum of four to six weeks for processing. This time factor must be taken into account when planning to meet deadlines. All required documents must be on file in the Office of Student Financial Aid according to the following schedule:

Aid For:	On file by:
Fall Quarter	April 15
Winter Quarter	November 1
Spring Quarter	February 1

Applications not complete by these dates will be reviewed as time and funds permit.

Student aid is generally awarded on an academic year basis. Most awards are for the entire academic year with payments made in equal quarterly installments. Application for financial assistance must be filed annually. Applications are generally available in Winter Quarter for the next academic year. Aid is not normally available for students entering the University during the Summer Quarter.

CAREER PLANNING AND PLACEMENT

The Career Planning and Placement Center is designed to help students plan, explore, and execute their future careers. The office provides information about specific jobs, general areas of employment, all types of employers, as well as opportunities for continuing education in graduate and professional schools. Staff advisors are available to counsel and advise students as they think about and plan careers, and to help them determine the best way to achieve their career objectives. A credit course, ECP 399, Career Development for Life Planning, is taught each quarter by the professional staff.

Co-operative programs (alternating work and school) and intern programs are available in several fields, as are opportunities for summer and vacation work. Students are assisted in securing part-time work in Athens and on the campus, with emphasis placed on openings in career-related fields. Student spouses are aided in finding full-time work in the commuting area while husbands/wives are attending the University.

As a student reaches the senior or last graduate year, opportunities are available to interview with prospective employers on and off campus and to contact prospective employers through job vacancy postings and resume books. A credentials file is maintained for each student who requests this service, which includes reproducing and mailing copies for job consideration. Alumni may participate in any of the above services and, in addition, may request notification of vacancies which occur in their field of ability and interest.

INTERNATIONAL SERVICES AND PROGRAMS

The Office of International Services and Programs provides counseling and advising for international students and exchange visitors in the areas of immigration procedures, financial concerns, housing information, and personal matters. In order to assist the foreign student in adjusting to the University and local community, the office sends out prearrival information to newly accepted students and provides an orientation program when the students arrive on the campus.

Special programs and activities designed to promote international understanding and cultural exchange both on and off campus are planned and coordinated by the Office.

Special activities include the weekly International Coffee Hour, the International Campus Friend Program, International Day at the Capitol, International Week, the Host Family Program, and the International Speakers Bureau. Valuable information about the University and the state is provided through a bimonthly newsletter and orientation handbook.

The Office also maintains a clearinghouse of information regarding overseas study, travel, and work opportunities for American students and faculty and provides counseling and advisory services to those interested in traveling abroad. In addition, the Office issues the International Student Identification Card, which entitles college students to receive discounts and benefits while traveling abroad.

REGISTRAR

Four departments exist within the Office of the Registrar for the convenience of students.

The Registration and Scheduling Office assists faculty and students in the registration process and publishes the quarterly *Schedule of Classes*. The maintenance of the University course master files is also supervised by this office.

The Records Office is responsible for the creation and maintenance of the permanent academic records of enrolled students. Class rolls, grade reports, and grade changes are processed through this office for inclusion in the official student academic record.

The Transcript Office provides transcript services to current and former students. Requests for transcripts must be in writing as required by the Family Educational Rights and Privacy Act of 1974. A notice of at least 24 hours is required. Standard request forms are available at the Records Window, or requests in letter form will be accepted. All transcripts cost \$2.00 each. An additional service charge of \$1.00 will be assessed for same-day service of transcripts. (This charge is subject to change without prior notice.)

The Graduation and Certification Services Office assists the academic deans in certifying that candidates have satisfied all necessary degree requirements, advises applicants and processes applications for veterans' benefits, and certifies student enrollment for external agencies.

Veterans' Certification

Veterans eligible for the G.I. Bill and dependents of deceased veterans eligible for

the War Orphans Program will be assisted by the Enrollment Certification Office in the Office of the Registrar, in maintaining proper liaison with the Veterans Administration for educational benefits.

Veterans initially applying for G.I. educational benefits must bring certified copies of their DD214, marriage certificate, and birth certificates of any children, if applicable, to the Office of the Registrar where they will complete an application. In order to assure prompt payment of initial educational benefits, the above application should be completed and returned 45 days prior to the beginning of the quarter in which the veteran or veteran's dependent intends to enroll.

At the beginning of each quarter, student veterans or veterans' dependents must report to the Office of the Registrar in order to maintain their registration for G.I. educational benefits. A student veteran or dependent receiving compensation who withdraws from the University or reduces an academic course load is required by the Veterans Administration to report such action promptly.

Veterans and other eligible persons entitled to G.I. educational benefits may receive such benefits for a total of 45 equivalent credit hours in Developmental Studies. Only 15 hours may be attempted in each of the basic skills. The need for participation in the Developmental Studies Program must be established by testing, counseling, and the recommendation of a faculty member.

JUDICIAL PROGRAMS

The Student Judiciary was established to hear and adjudicate cases of alleged violations of University Rules and Regulations. The Office of Judicial Programs provides training for the justices, aids in the administration of the courts, and coordinates judicial bodies and hearing boards on campus. This office also advises, trains, and coordinates the services of the Defender-Advocate Society by assisting its members in the preparation of cases to be heard by the courts of the Student Judiciary or in Administrative Hearings.

Any person may file a complaint if he or she feels a University Conduct Regulation has been violated. A student, faculty member, or staff member who has information regarding what may be a regulation infraction should contact the office. The staff will offer advice and give assistance on properly filing a complaint if this becomes necessary.

The Office of Judicial Programs also assists students in the identification and resolution of

legal problems. The assistance is in the form of counseling and, when necessary, referral to proper individuals or agencies.

STUDENT ACTIVITIES

The Department of Student Activities is a programming and service department and offers a wide variety of both to students and student organizations. It maintains files on all registered student organizations and offers programming and financial advisement to club officers. Personnel of the department advise the University Union and its program divisions, the Black Affairs areas, fraternities and sororities, the Recreational Sports Program, Leadership Development, Special Programs, and Communiversity—a coordinating agency for student community service projects. The department is responsible for the production of student identification cards and a monthly calendar of events.

Recreational facilities and activities available through the department in Memorial Hall and the Tate Student Center include table tennis, billiards, student lounges, ballroom, meeting rooms, club offices, pop concerts, varied film programs, lectures, debates, panel discussions, and special presentations. In addition, Legion Pool is open during the warm months.

Services provided by the Department of Student Activities include van rental, quick copy and full service printing, technical equipment rental, and recreation equipment rental.

ADMINISTRATIVE DATA PROCESSING

The Office of Administrative Data Processing reports jointly to the Vice President for Business and Finance and the Vice President for Student Affairs and provides computer-based information system services to the administrative departments of the University. This service primarily involves maintenance of current existing user data-processing systems; modification and expansion of systems currently meeting user requirements; assisting and/or training user departments in obtaining various ad hoc or short-term reports; development of new "state of the art" user-oriented application systems, data base planning, coordination, and consultation; and provision of data entry and control services for administrative users. These services are provided through three departments: Business Applications, Student Applications, and Control and Data Entry.

OTHER STUDENT SERVICES

FOOD SERVICE

The University operates four food service facilities for general student use: BOLTON HALL, OGLETHORPE HALL, SNELLING HALL, and the TATE STUDENT CENTER. The dining halls are located at easy-to-reach locations either by walking or by UGA bus. Two economical meal plans as well as meals on a cash basis are available at these facilities.

The rates for meal plans are as follows:

	Academic Year Contract	Payable in Quarterly Amounts	Daily Equivalent
5 days-15 meals or more per week (Monday- Friday)	\$ 999	\$333	\$6.09
7 days-20 meals or more per week (Monday- Sunday lunch)*	\$1,188	\$396	\$5.26

*No evening meal on Sunday

Students are offered many special events during the academic year including Hawaiian Luau, Steak Night, Holiday Dinners, and Ice Cream Sprees. Meals are served in a pleasant atmosphere and with unlimited seconds system of service. Food service in the Tate Student Center, located on North campus, is operated on a cash basis only.

STUDENT COUNSELING AND ACADEMIC ADVISING

The University attempts to maintain a close personal association between student and faculty. Each instructor and academic dean has the responsibility of guiding students in problems of an academic nature. Other counseling is provided by the Counseling and Testing Center, the University Health Service's Mental Health Division, and other Student Affairs personnel. The Psychology Clinic and the Speech and Hearing Clinic offer specialized services coordinated with the Office of Student Affairs. The Diagnostic and Evaluation Clinic, a part of the Department of Exceptional Children in the College of Education, provides services to those who are multi-handicapped or have a learning disability.

HANDICAPPED STUDENT SERVICES

Handicapped Student Services, administered by the Office of Student Affairs in 201 Academic Building, coordinate assistance and services for those students, who by reason of disability or handicapping condition, require some form of assistance in attaining independence within the campus environment.

The direct services of these offices include providing: special parking permits; pre-registration assistance; class relocation; volunteer readers; visual aids; assistance with on-campus van service; speech and hearing services; and other needs as they occur.

TUTORIAL SERVICES

Tutorial Services offer free tutoring to students in introductory math, sciences, and languages. All tutoring is done on an appointment basis and is primarily one-to-one, with some small group (two or three students) sessions. Tutors are students who have been selected on the basis of outstanding academic achievement, faculty recommendations, and ability to relate to other students.

PSYCHOLOGY CLINIC

The Psychology Clinic, located in the Psychology Building, offers a wide range of psychological services including assistance in dealing with personal adjustment, phobias, sexual problems, self-control, and emotional management. Application for service may be made by calling the Clinic. Fees for service are charged on a sliding fee scale.

STUDENT DEVELOPMENT LABORATORY

The Student Development Laboratory in the College of Education offers a variety of personal developmental groups, workshops, and personal consultation opportunities for students, faculty, and staff. Staffed by graduate students in the Department of Counseling and Human Development Services, the activities are designed to encourage personal growth, focusing on such topics as "Academic Success (study) Skills," "Values Clarification" and "Assertiveness Training." Individual and group counseling opportunities are also available.

NATIONAL STUDENT EXCHANGE

The National Student Exchange provides state college and university students with an opportunity to become better acquainted with different social and educational patterns in other areas of the United States. NSE encourages students to experience new life and learning styles, appreciate differing cultural perspectives, learn more about themselves and others, and broaden their educational background through specialized courses or unique programs which may not be available on the home campus. The program is administered through the Office of Student Affairs.

STUDENT LIFE

ART, DRAMA, AND MUSIC ACTIVITIES

Art activities include exhibitions by students and faculty of the Department of Art as well as occasional traveling exhibitions, slide lectures and informal critiques by visiting artists and various student field trips. A 10-week summer session in Cortona, Italy is jointly operated by the Department of Art and the School of Environmental Design.

All students are eligible to participate in the quarterly major productions of the University Theatre in the drama department. Outstanding professional companies also appear on the campus.

The School of Music presents weekly programs featuring faculty members, advanced students, and guest artists. Other music activities include the Men's Glee Club, Women's Glee Club, University Chorus, Symphony Orchestra, and the University Band.

SPORTS AND RECREATION

The University encourages interest in sports by affording students opportunities to be participants and spectators in a variety of intramural, sports club, and intercollegiate programs.

The intramural program includes touch football, flag football, volleyball, basketball, soccer, softball, golf, weightlifting, cross-country, track, badminton, swimming, horse-shoes, shuffleboard, bowling, archery, table tennis, and tennis.

Sports clubs are student-run organizations which compete in their particular sport with similar clubs at other colleges and universities. Currently, students have organized men's and women's rugby clubs, men's and women's soccer clubs, sailing club, lacrosse club, and waterski club among others.

Intercollegiate sports for men include football, basketball, baseball, golf, swimming, cross-country, and track. Intercollegiate sports for women include golf, tennis, volleyball, track, basketball, swimming, and gymnastics.

Sports and recreation facilities available for student use include 35 acres of intramural playing fields, 22 outdoor and 4 indoor tennis courts, the track, Stegeman Hall (basketball courts, racquetball courts, weight room, pool), the Physical Education Building (gymnasium, pool, Universal gym), racquetball courts at the Coliseum, the University golf course, and Lake Herrick.

FORENSIC ACTIVITIES

Two debating societies offer the stimulation of intersociety debates and orations—Demosthenian Literary Society and Phi Kappa Literary Society. The University also sponsors University-wide debating teams, open to men and women students which engage other outstanding college teams. The sponsoring academic area for the debate teams is the Department of Speech Communication through the Georgia Debate Union.

STUDENT COMMUNICATIONS

Student communications include three campus-wide media: *The Red & Black* (the independent student newspaper), the *Pandora* (the yearbook), and WUOG-FM (the student radio station).

SOCIAL FRATERNITIES AND SORORITIES

A wide program of social functions is provided by twenty-nine men's Greek letter fraternities and twenty women's Greek letter sororities.

Fraternities

Acacia
Alpha Epsilon Pi
Alpha Gamma Rho
Alpha Phi Alpha
Alpha Tau Omega
Chi Phi
Chi Psi
Delta Tau Delta
Kappa Alpha
Kappa Alpha Psi
Kappa Sigma
Lambda Chi Alpha
Omega Psi Phi
Phi Beta Sigma
Phi Delta Theta

Phi Gamma Delta
Phi Kappa Psi
Phi Kappa Tau
Phi Kappa Theta
Pi Kappa Alpha
Pi Kappa Phi
Sigma Chi
Sigma Nu
Sigma Phi Epsilon
Sigma Pi
Tau Epsilon Phi
Tau Kappa Epsilon
Theta Chi
Zeta Beta Tau

Sororities

Alpha Chi Omega
Alpha Delta Pi
Alpha Gamma Delta
Alpha Kappa Alpha
Alpha Omicron Pi
Chi Omega
Delta Delta Delta
Delta Gamma
Delta Phi Epsilon
Delta Sigma Theta

Gamma Phi Beta
Kappa Alpha Theta
Kappa Delta
Kappa Kappa Gamma
Phi Mu
Pi Beta Phi
Sigma Delta Tau
Sigma Kappa
Zeta Phi Beta
Zeta Tau Alpha

RELIGIOUS ORGANIZATIONS

Students may participate in the religious programs of Athens' churches and in student organizations sponsored by all major faiths, denominations, and inter/non-denominational organizations. Many of these maintain student religious centers. Religious centers at The University of Georgia include Baptist Center, B'nai B'rith Hillel Foundation, Catholic Center, Christian College of Georgia, Episcopal University Center, First Church of the Nazarene, Georgia Christian Campus Ministry, L.D.S. Institute of Religion, Methodist Center (Wesley Foundation), Navigators, Presbyterian Center, Unitarian Universalist Fellowship, University Church, University Lutheran Chapel and World Wide Disciples.

STUDENT ACTIVITY GROUPS

Several professional and honorary fraternities and sororities, interest clubs, honor societies and student governmental groups exist on the University campus. A detailed listing of these 400 organizations is available from the Department of Student Activities in the Tate Student Center.

REGULATIONS

The University maintains a code of regulations which is printed in the Student Handbook covering individual conduct and student organization activities. A separate handbook outlines traffic and parking regulations. All students are expected to know and observe these rules and regulations. To adjudicate alleged violations of these regulations, a student judiciary, also described in the Student Handbook, was established in 1969.

SPECIAL SERVICES AND FACILITIES

Special services and facilities of The University of Georgia include community education services, various institutes, the Georgia Center for Continuing Education, the University Press, Athletic Association, and Alumni Society.

INSTITUTES AND CENTERS

Institute of Community and Area Development (ICAD)

This institute makes the resources of the University available to state, area, and local organizations confronted by programs of community and area growth, adjustment, and development. Specialists from a large number of fields work together as problem-solving teams. Their activities include research and specialized studies; provision of factual information; help in community program planning; publishing of related materials; assistance in conducting leadership seminars, forums, and other educational meetings.

Personnel involved are primarily University faculty, staff, and graduate students. These activities frequently involve contractual arrangements between the University and the local organization.

Carl Vinson Institute of Government

The Vinson Institute is responsible for conducting an interdisciplinary program designed to improve the knowledge and skills of elected and appointed Georgia state and local public officials. With expertise in government, public administration, public law, public finance, criminal justice, public management, and planning, Institute faculty formulate and conduct over 600 training programs and conferences each year, offer technical assistance and consulting to public officials, and engage in an extensive research and publications program. The Vinson Institute cooperates with the

Department of Political Science in the award of the master in public administration degree.

Institute of Higher Education

The Institute of Higher Education has been organized to work with other educational agencies and organizations in the development of higher education. The Institute provides a diversity of services to two-year and four-year colleges in the state and surrounding region, cooperates with other institutions in statewide and regional studies, and participates in numerous planning, development, assessment, and evaluation projects.

Institute of Natural Resources

The Institute of Natural Resources conducts and manages interdisciplinary research, service, and educational programs related to natural resources. The research, teaching, and advisory efforts are focused on the applications of the biological, physical, and social sciences to the development, management, utilization, and conservation of natural resources, especially land, water, minerals, fisheries, wildlife, and energy. The focus of the Institute faculty is on synthesizing scientific research for analysis of complex natural resources policy and management issues. The Institute provides graduate research assistantships for studies related to these fields.

Institute of Ecology

The Institute of Ecology supports and encourages multidisciplinary research and public service activities in ecology involving faculty and graduate students from a variety of departments, schools, and research sites. The organization operates the Savannah River Ecology Laboratory for the U.S. Department of Energy at the Savannah River Ecology Plant. The Institute supports research in marine and freshwater ecology, thermal ecology, radiation

ecology, nutrient cycling, tropical and temperate forests, old field dynamics, agroecosystems, granite outcrops, and wetlands. The Institute's public service programs consist primarily of workshops and special studies that are conducted on a contractual basis for government agencies and private industries.

Institute for Behavioral Research

The Institute for Behavioral Research is a multidisciplinary research organization. Its purpose is to encourage a pooling of the expertise of staff members and graduate students from such departments as sociology, psychology, political science, management, economics, and educational psychology in an attack on significant social and behavioral problems.

Institute for Business

The Institute for Business encourages communication between higher education and the business community by promoting the involvement of all professional schools and programs with the business aspects of their constituencies' activities. It further encourages the participation of Georgia-based businesses in the commercialization of the outputs of University research. Working through the Small Business Development Center, the Institute seeks to improve the managerial efficiency of small business and to develop an awareness of business and the free enterprise system among high school students.

The Institute for Business was authorized by the Board of Regents in May, 1983, and the Small Business Development Center is a component of the Institute.

Small Business Development Center (SBDC)

The Small Business Development Center works to improve the efficiency of small businesses in Georgia through counseling, continuing education, and research. By improving managerial efficiency, the Center seeks to enhance the development of business in the private sector and improve productivity. The Center strives furthermore to encourage minority and female business ownership, and through its International Trade Development Center encourages and fosters exporting by Georgia firms.

The Small Business Development Center is a unit of The Institute for Business.

Center for Applied Isotope Studies (CAIS)

The Center for Applied Isotope Studies is an applied research group located at the University's Research Park in the CAIS Building. The primary activities of the Center are to assist the academic, scientific, and industrial community in applied and basic research. Emphasis is placed on applied research, assisted by a unique array of nuclear analytical tools, in resolving critical contemporary problems. A service laboratory is maintained for age dating, stable and radiometric analyses.

Center for Global Policy Studies

The Center for Global Policy Studies serves as a mechanism for coordinating and promoting instruction, service, and research relative to global policy studies. The focus of the Center is on issues which are distinctly international or transnational in character, such as the unfinished task of organizing a durable peace in a nuclear world, the growing pressures of expanding populations upon limited resources, and continuing threats to elemental human rights. One of the primary objectives of the Center is to enrich the quality of training of undergraduates in global policy studies. The Center administers the Certificate in Global Policy Studies which is available to qualified undergraduate students throughout the University. The Center also has a graduate level Certificate in Global Policy Studies.

Marine Sciences Program

The Marine Sciences Program, established by the University in 1977, is responsible for the coordination and general management of the Marine Institute, Marine Extension Service, Marine Sciences Faculty, and the Georgia Sea Grant College Program.

The Marine Institute, located on Sapelo Island, was established in 1953 and serves as a research facility for resident staff and for campus-based faculty members. Research has centered mainly on basic marsh ecology to provide an understanding of energy flow, cycling of minerals and nutrients through the marshes, and factors regulating the metabolism of the salt marsh ecosystem.

The Marine Extension Service helps to solve problems related to the state's marine resources. The Marine Resources Center on Skidaway Island is the major marine education facility for schools and colleges in the state. At the Brunswick Extension Station, specialists work directly with the fishing and

seafood processing industries to solve problems of resource management and utilization.

The Georgia Sea Grant College Program, part of the National Sea Grant College Program, was established in 1971. In an approach roughly analogous to that of the Land Grant System in working with agriculture, Sea Grant promotes the wise use of marine resources through a coordinated program of research, education, and advisory services.

Gerontology Faculty, Center, and Program

The University of Georgia has a Faculty of Gerontology, a Gerontology Center, a Gerontology Program at the Georgia Center for Continuing Education, a Certification Program at the graduate level, and some 40 courses devoted partially or entirely to aging.

Faculty of Gerontology: The University-wide Faculty of Gerontology is charged with the responsibility of developing a program of instruction, service and research in the processes of aging, biological and behavioral sciences and application of knowledge to practice. It is comprised of approximately 60 members in 12 units of the University.

Gerontology Center: The major purpose of the Gerontology Center is to coordinate and promote activities relating to aging throughout the University. It has the responsibility of monitoring the gerontology curriculum, a certification program at the graduate level and library holdings; and of serving as a catalyst in securing grants.

Gerontology Program: The Gerontology Program of the Georgia Center for Continuing Education provides leadership for non-credit activities relating to the elderly, including workshops, in-service training, film festivals, production of films and tapes, and serves as a major resource for numerous community, organizational, and governmental leaders. Persons interested in these aspects of gerontology should call the Georgia Center for Continuing Education (542-1272).

The focus of coursework in gerontology at the University is primarily at the graduate level, but there are opportunities for undergraduate students to enroll in courses and practicums relating to the elderly. Those who wish to take one or more such courses may choose from:

FDN 500. Nutrition Related to the Human Life Cycle. 5 hours.

GNT 400. Seminar in Aging. 5 hours.

GNT 439. Service-Learning With the Elderly. 5 hours.

PSY 406. Psychology of Aging. 5 hours.*

REC 538. Recreation and Aging. 5 hours.*

SOC 365. Social Gerontology. 5 hours.*

SOC 466. Aging and Modernization: Cross-Cultural Studies. 5 hours.*

Interested students should make contact with their respective department heads, or Dr. James E. Montgomery, Chairman of the Faculty of Gerontology and Director of the Gerontology Center (542-3954).

THE GEORGIA CENTER FOR CONTINUING EDUCATION

The Georgia Center for Continuing Education seeks to fill the need for continuing education for Georgia citizens regardless of their previous contact with institutions of higher education. One of the major functions of the University is to offer credit and non-credit continuing education programs on campus and throughout the state. It draws on the full resources of the University, working closely with the faculty and participating groups to evaluate its various programs and design new services.

The Georgia Center building on campus provides, in addition to administrative offices for the program, living quarters for approximately 300 adults, other conference facilities for up to 500, as well as studios, offices, and production areas for University of Georgia Television and media production services for continuing education and the service function of The University of Georgia.

Conferences and Institutes

The colleges and schools of the University arrange conferences, seminars, and institutes for adults who wish to continue their education by keeping informed about developments in their respective fields of interest. These continuing education activities are usually co-sponsored by professional, business, industrial, governmental, or social organizations.

Inquiries should be made to the Georgia Center for Continuing Education, The University of Georgia, Athens, Georgia 30602.

Georgia Center and Extension Classes

As an extension of its regular credit program, the University offers extension classes whenever as many as 20 students desire a particular course. Regular college credit courses taught by approved instructors are offered at these

*For prerequisites and descriptions, see individual departments.

off-campus locations, as well as special non-credit programs tailored to the needs of the people of the area.

Course content of credit courses is identical with the standards that apply on the campus. The faculty is approved by the department concerned and by the Vice President for Academic Affairs. Students satisfactorily completing these classes receive credit on transcripts issued by the University registrar.

Fees for all undergraduate continuing education credit programs are based on a rate of \$28 per quarter hour. A registration fee of \$1 per academic quarter is charged all students enrolling at off-campus locations.

Special certificate courses have been authorized in general business and in accounting. Students may elect the courses in these two sequences for two-year terminal programs, omitting some of the normal requirements of the freshman and sophomore years in the usual baccalaureate program.

In Athens, both credit and non-credit courses are scheduled quarterly. The credit program is conducted under University academic regulations; the non-credit program — The University Community Program — meets in the Georgia Center, offering informal discussion of timely subjects. Quarterly bulletins on all these programs are available on request.

Independent Study

The Georgia Center for Continuing Education provides an extensive program of services to individual students. Students may acquire academic credit by completing undergraduate courses through Independent Study. Independent Study courses are taught by more than eighty faculty members located at universities and colleges in the University System of Georgia.

Independent Study also offers continuing education courses and self-directed courses for adults interested in continuing their education.

Special Services

Many special programs such as community development education, civil defense and emergency preparedness education, and the drama loan library are also directed by the Georgia Center.

Communications Services

The Communications Services Division is a television, film, and multi-media production and distribution center which operates under the name of University of Georgia Television.

UGaTV is affiliated with the Georgia Public Telecommunications Commission and provides telecasting and production services to that organization. However, this Division's productions are distributed not only in Georgia but across the nation through broadcast, cable, and library services.

The Georgia Center Film Library houses more than two hundred film productions. The educational and instructional films produced by the Communications Services Division each year cover a wide range of subjects.

The Communications Division of the Georgia Center acts as University liaison with the National University Teleconferencing Network, an organization of 67 institutions of higher learning including the Smithsonian devoted to the production and marketing of high-quality teleconferences by and for its members. NUTN offerings include both video and audio conferences.

The Division also coordinated the University Teleconferencing Network, a statewide audio conferencing network with 23 charter members, each equipped with a Bell System 50-A conferencing telephone. The network is devoted to continuing education, staff training and development, and conference enhancement.

The organizational structure of this Division is comprised of three offices and three departments. There are the offices of Administration, Special Projects, and Administrative Services and departments of Programming and Utilization, Production and Development, and Engineering and Technical Services.

OTHER UNIVERSITY ACTIVITIES

Office of Instructional Development (OID)

The OID is responsible for promoting excellence in teaching throughout the University. The office is advised by a faculty committee and reports directly to the Vice President for Academic Affairs. The OID is also responsible for services offered by the Instructional Resources Center (IRC). IRC distributes a wide variety of instructional media including films, videotape cassettes, audio tapes, slides, and projectors. IRC is also capable of designing television productions, graphic materials, and a wide range of photographic services. OID administers several other programs and services to faculty including a teaching assistants training program and consultation to faculty on the use of computer-assisted instruction.

The University of Georgia Press

The University of Georgia Press publishes books that contribute to a better understanding of human affairs. It publishes the results of specialized research and scholarship together with scholarly books which interpret and preserve the history and culture of the state and region. The press provides a publication outlet for scholars throughout the nation.

For further information or a list of publications by the press, contact the director of The University of Georgia Press, Athens, Georgia 30602.

The Georgia Museum of Art

The Georgia Museum of Art was established in 1945 when Alfred H. Holbrook donated his collection of American paintings to The University of Georgia. Since that time, the collection of over 5,000 objects, including the Eva Underhill Holbrook Memorial Collection of American Art, has become an important cultural and educational resource for the University.

The permanent collection at the Museum provides resources for students at the University and for a much wider audience through the loan of works to other museums and universities in the region and nation.

More than a dozen temporary exhibitions are brought to the University each year involving approximately 1,000 loaned objects. Lectures, public gallery talks, and special events are scheduled to complement these exhibitions. Special tours of temporary exhibitions or the permanent collection are available for University classes by request.

The Museum has created new interest in art among people, many of whom had no opportunity to visit galleries and museums that exhibit art of outstanding quality. Students from kindergartens, elementary schools, and high schools throughout the state visit the Museum and, for many, these visits are the initial contact with visual art of acknowledged quality.

Athletic Association

The University of Georgia conducts a complete program of intercollegiate athletics. The University is a member of the Southeastern Conference, the National Collegiate Athletic Association, and abides strictly by the regulations and policies of these groups. Although the faculty has general control of internal policies of the University relating to all phases of intercollegiate athletics, The University of Georgia Athletic Association has been created

to facilitate the handling of the business and financial side of the intercollegiate program.

Alumni Society

The University of Georgia Alumni Society maintains an active program for alumni and works closely with student groups on programs. All persons who at any time were matriculated as regular students in the University at Athens are eligible for membership. Alumni who contribute to annual giving may vote on society business, are eligible for election to office, and receive the magazine *Alumni Record*. Non-alumni parents and friends are welcomed as associate members. An active Student Alumni Association is maintained by the Alumni Society, and students are invited to visit the Alumni House on South Campus.

The University of Georgia Foundation

The University of Georgia Foundation was organized in 1937 under the sponsorship of the Alumni Society and its officers. The Foundation is a corporation under the laws of the state of Georgia and has a board of trustees, consisting of alumni and friends of the University.

The purposes of the Foundation are to strengthen its financial resources by encouraging gifts to the University, and to receive, hold, and administer such gifts in accordance with the instructions of the donors.

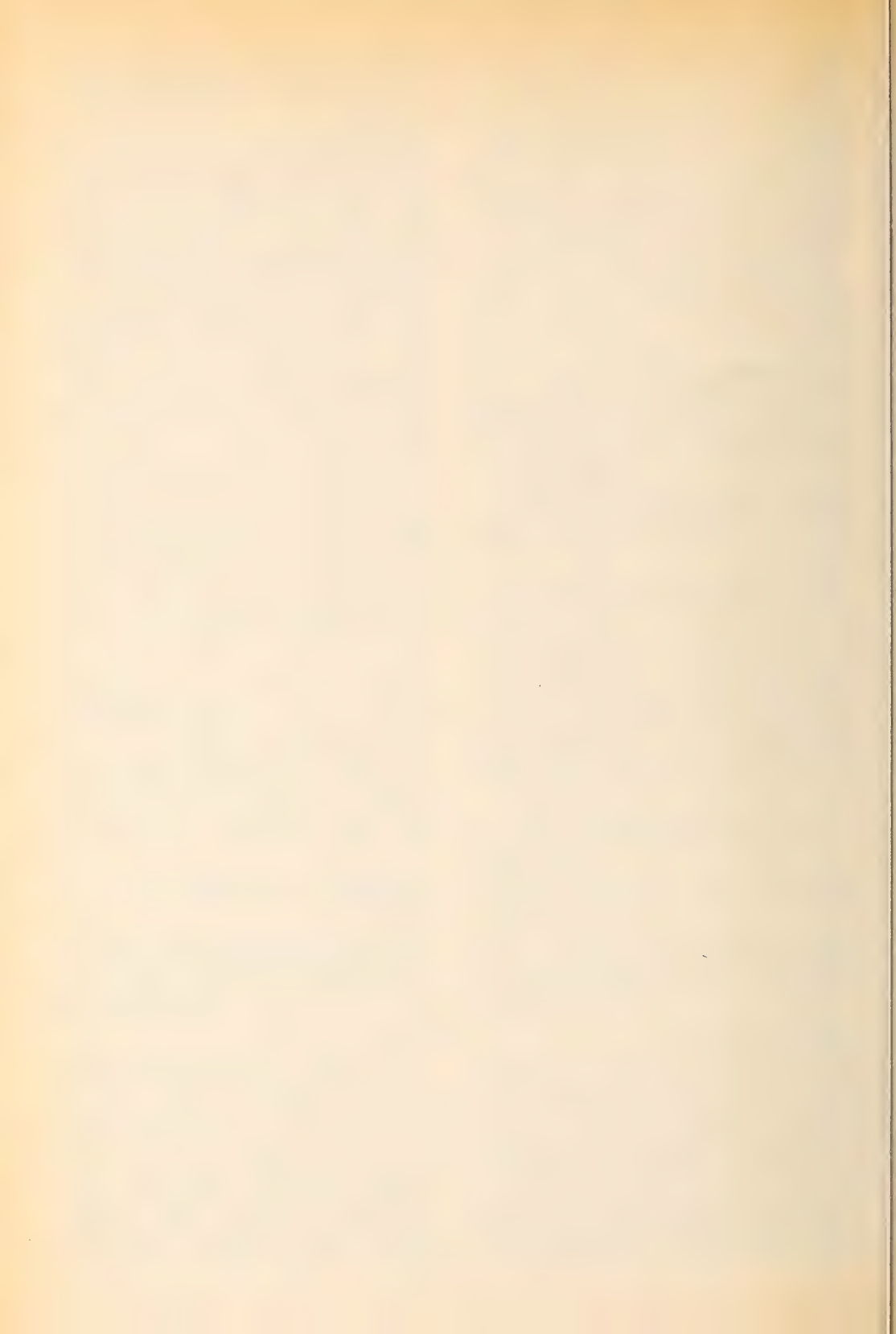
Information regarding the Foundation may be obtained by writing to the Vice President for Development and University Relations, The University of Georgia, Athens, Georgia 30602.

University of Georgia Research Foundation

The University of Georgia Research Foundation was established as a nonprofit corporation under the laws of Georgia in 1978. It is governed by a Board of Directors consisting of faculty members, administrators, alumni, and others.

The Research Foundation actively seeks contracts and grants for research projects which are subcontracted to the University. It also seeks to make new technology resulting from research available for public use through patenting and licensing.

Additional information about the Research Foundation may be obtained from the Office of the Vice President for Research, Boyd Graduate Studies Research Center, The University of Georgia, Athens, Georgia 30602.





**ACADEMIC INFORMATION
BY SCHOOLS AND
COLLEGES**

THE COLLEGE OF AGRICULTURE

ADMINISTRATIVE OFFICERS

William P. Flatt, B.S., Ph.D., *Dean
and Coordinator of Agriculture*

Talmadge C. DuVall, B.S.A., M.S.A., D.P.A.,
*Associate Dean and Director of the
Cooperative Extension Service*

E. Broadus Browne, B.S., M.S., Ph.D.,
*Associate Dean and Director of the
Agricultural Experiment Stations*

Chris J.B. Smit, B.Sc., Ph.D., *Associate Dean
and Director of Resident Instruction*

Thomas L. Frazier, B.S.A., M.S., *Assistant
Director of Resident Instruction*

GENERAL INFORMATION

Purpose and Organization

The College of Agriculture might be called the College of Life Sciences since it is concerned with the study of basic principles of biology, chemistry, mathematics, physics, economics, and engineering. Life scientists are concerned with the application of basic principles in solving problems of land use, food and fiber production, nutrition and food science, genetics, engineering, the control of plant and animal diseases and pests, the economics of production and marketing, and many other problems.

The dean and coordinator is responsible for the administration of resident instruction, the Agricultural Experiment Stations and the Cooperative Extension Service. There are nine divisions or departments within the College of Agriculture responsible for their respective instruction, research, or extension functions. These units include: Agricultural Economics, Agricultural Engineering, Agronomy, Animal and Dairy Science, Entomology, Food Science, Horticulture, Plant Pathology, and Poultry Science. A program of study in plant protection and pest management is jointly offered by the departments of Agronomy, Entomology, Horticulture, and Plant Pathology and a program of study in Environmental Health Science is available in the College. In addition, the College of Agriculture is

associated with other schools and colleges of the University in certain related fields. Among these fields are botany, biology, biochemistry, chemistry, education, entomology, journalism, landscape operations, microbiology, sociology, and veterinary medicine.

Facilities

The College is housed in several buildings on South Campus with administrative offices in Conner Hall. Research facilities include a number of farms, large and small animal laboratories, greenhouses, and growth chambers at the experiment stations at Athens, Griffin, and Tifton, as well as other facilities at five branch stations, two field stations, and four cooperating stations. These stations conduct a comprehensive program of basic and applied research in all phases of agriculture, encompassing production, processing, marketing, consumer relations, and agribusiness. Research in forestry and home economics is also part of the experiment station program. The primary purpose of the work of the stations is to provide an ever-increasing body of knowledge and information to the resident teaching and extension functions of the College of Agriculture.

The College Experiment Station at Athens is directly associated with the resident teaching program of the College of Agriculture. Many of the research scientists at this station teach at both the undergraduate and graduate levels. The experiment station laboratories and field plots supplement the regular teaching facilities. In connection with the research program, part-time employment and a number of graduate assistantships are available to students majoring in the College of Agriculture.

The major function of the Cooperative Extension Service is to aid in diffusing among the people of the state useful and practical information on subjects relating to agriculture, forestry, and home economics and to encourage the application of this information. It provides informal education which helps people solve the problems encountered in home

economics, youth development, agriculture, agricultural business, resource development, and other related subjects. The extension service program is carried out in cooperation with the counties of the state by specialists from the University, county agents, and county extension home economists. Many short courses of a practical and intensive nature are offered by the Cooperative Extension Service. Announcements of these courses are made throughout the year.

Degrees Offered

The College of Agriculture offers degrees in the agricultural and biological sciences, agricultural engineering, and environmental health science. Students registered in the College may receive the Bachelor of Science degree in Agriculture, the Bachelor of Science degree in Environmental Health Science, or the Bachelor of Science degree in Agricultural Engineering.

Graduate Study

The College of Agriculture offers graduate programs leading to the M.S. degree in agricultural economics, agricultural engineering, animal science, agronomy, botany, dairy science, entomology, food science, horticulture, plant pathology, and poultry science. Additional degrees offered are the Master of Agricultural Extension and the Master of Plant Protection and Pest Management.

The Ph.D. degree is offered in agricultural economics, agronomy, botany, food science, horticulture, plant pathology, and poultry science. In addition there are interdisciplinary programs in animal nutrition and animal sciences (physiology, nutrition, and genetics) and plant sciences.

Honors Program

The College of Agriculture participates in the programs for superior students including the Honors Program. Admission of beginning freshmen is by invitation. Students who are not invited as entering freshmen and who, after attending the University for a quarter or more, have a cumulative average of 3.5 or better, may request admission to the program. Students transferring from other universities or colleges with a cumulative average of 3.3 should write directly to the director of the Honors Program and request an interview. Students interested in this program should consult the section "Programs for Superior Students."

Advanced Placement

Advanced placement examinations are given to freshmen during orientation sessions. In addition, students who enter with acceptable scores on the advanced placement tests of the College Board may be granted credit or exemptions for courses taken previously. Freshmen can exempt elementary courses in biology, chemistry, English, foreign languages, history, mathematics, political science, and psychology. Students are encouraged to exempt the elementary courses.

Transfer Students

Students transferring from other units of the University System will be given full credit for all courses completed with satisfactory grades, except those technical courses specifically offered to satisfy requirements for a two-year terminal program. Students should consult the programs of study section of the College of Agriculture to determine freshman-sophomore course requirements for each major. Any portion of the core curriculum which has not been completed during the freshman and sophomore years will be completed during the junior and senior years.

Academic Advisors

All undergraduate students in the College of Agriculture are assigned an advisor according to their expressed academic interest. Students should consult with their advisor on all phases of their academic program. Student advisors are assigned by the department head and students should contact their department head immediately upon arrival on campus. Unclassified and pre-veterinary students should report to Room 102, Conner Hall.

BACHELOR OF SCIENCE IN AGRICULTURE DEGREE REQUIREMENTS

Following is an explanation of majors offered by the departments of the College of Agriculture and related departments. The requirements outlined within each program are suggestive rather than definite. The major for each student is an individual program, arranged in consultation with staff members in the department in which the major is taken. The following programs include the courses which the majority of students will use to satisfy requirements for the specified major. A minimum of 195 hours is required for the B.S.A. degree.

General Core Curriculum

The core curriculum for the freshman and sophomore years provides general education in basic science courses as well as introductory courses in agricultural science. This allows a flexible choice of agricultural and non-agricultural electives. By the time they have completed the core curriculum, students should have selected their major field of study.

For general information on the core curriculum, see the General Information section of this bulletin, under the listing *The Core Curriculum*. Courses under Areas I, II, and III are generally standardized throughout the College. For specific Area IV requirements, consult the departmental listings which follow.

	HOURS
AREA I HUMANITIES	20
ENG 101 and 102 or 105H	10
SPC 108 or SPC(MAN) 109 or SPC 218H	5
Select one course from one of the following areas: ART, CLC, CML, ENG, MUS, PHY, REL, SPC, or a foreign language.	5

AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L and 112 and 112L, or higher	10
MAT 100 or higher	5
PCS 101 or higher	5
Students should check department/major listings to determine the appropriate sequence in chemistry and the specific requirements for mathematics and physics.	

AREA III SOCIAL SCIENCES	20
POL 101 and HIS 251 or 252 unless constitution and history requirement are satisfied by examination; select courses from AEC, ANT, ECN GGY, HIS, PHY, POL, SOS, or SOC	20

AREA IV COURSES RELATED TO MAJOR	30
Biological Science	5
Courses as outlined by departments	25

BASIC PHYSICAL EDUCATION — 5 hours or 6 hours (depending on date of matriculation)

Agricultural Economics (AEC)

The Department of Agricultural Economics provides education for students interested in employment opportunities in contemporary agriculture and allied areas. Principal objectives of this program are:

(1) To prepare students for entering private business in positions that require fundamental education in agricultural business and marketing, resource development, farm management, credit and finance, and similar areas associated with agriculture. Emerging problems associated with human and natural resource adjustments, food and fiber distribution, and the commercialization of agriculture emphasize the need for such education. Comparable educational preparation is also provided for students interested in employment positions with federal and state departments of agriculture.

(2) To prepare students for graduate work in agricultural economics. Research programs in agricultural economics in the land-grant colleges, by private business, and the public sector offer additional opportunities for agricultural economists with advanced education.

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L, 112 and 112L	10
MAT 103 or 116	5
PCS 101	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L or BOT 121-121L or 223H	5
STA 200 or MS 312	5
MAT 207 or 253	5
ACC 110 or 116	5
CSC 201 or MS 209	5
AS 201-201L	5

Junior and Senior Years

- (1) AGY 201-201L plus a minimum of 10 additional hours in the College of Agriculture other than Agricultural Economics.
- (2) The following division core requirements:
 - AEC 300 Economics of Agriculture: Theory of the Firm
 - AEC 301 Farm Organization and Management
 - AEC 302 Economics of Agriculture: Aggregate Analysis
 - AEC 304 Economics of Agricultural Marketing
 - AEC 340 Introduction to Agricultural Policy
 - AEC 364 Land Economics
 - AEC 458 Intermediate Economic Principles

(3) Major Electives:	
15 hours in Agricultural Economics plus 10 additional hours from approved lists for:	
A. Agricultural Business and Marketing	
B. Farm Management and Finance	
C. Natural Resource Economics	
D. Community Rural Development	
E. Quantitative Methods	
(4) Electives	25
TOTAL JUNIOR AND SENIOR HOURS	100
MINIMUM HOURS FOR GRADUATION	195

Agricultural Education (EAG)

Career Opportunities

The courses offered in this department prepare students to be teachers of vocational agriculture. Students majoring in this department develop a broad background in the agricultural sciences and upon the satisfactory completion of the program outlined below are qualified for certification by the State Department of Education as teachers of vocational agriculture. The program for training teachers of vocational agriculture is carried on in cooperation with the College of Education through its division of vocational education.

In addition to the opportunities for teaching vocational agriculture, graduates who have majored in this department are employed in many leadership positions in the fields of agriculture and education. Such positions capitalize on the technical and professional skills of these graduates for application in various selling, promotional, administrative, research and educational leadership projects.

Apprentice Teaching

During one quarter of the senior year, each student does apprentice teaching in a selected off-campus school for which 15 quarter hours of credit are given. This system of training enables the student to deal firsthand with the many problems of a teacher of vocational agriculture in a normal situation under the careful supervision of the local teacher of vocational agriculture as well as a member of the University staff.

Concentration in Agricultural Education

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L, 112 and 112L	10
MAT 100	5
PCS 101	5

AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L, 102-102L	10
AGY 305-305L	5
Courses in agricultural science, agricultural engineering, or forest resources	15
Junior and Senior Years	
Professional Education Area:	33
EPY 304 or 305	
EAG 335, 336, 349, 546	
Basic Support Area:	35
AEC 300, 301 or 304; ET 303, 307;	
PAT 353-353L; GEN 358; and	
ENT 374-374L	
Teaching Area Specialization: Selected in any one department from the following courses:	10
AS 331 and 360-360L or 361-361L;	
AEC 403, 408, 421, or 502;	
AGY 321, 425, or 458; DS 310,	
362, or 463; ET 328, 360, 365,	
or 380; HOR 300, 362, 368, 405	
or 406; PS 371 372, or 375	
Special requirements: EAV(ESS) 401,	
EXC 500 or EVO 555	8
Free Electives	14

Agricultural Extension (AET)

Career Opportunities

The concentration offered by this department is designed for students who wish to prepare for Cooperative Extension Service careers. It is open to students pursuing the B.S.A. curriculum in the College of Agriculture and in the College of Home Economics.

Students who choose this concentration must complete all freshman and sophomore courses in their respective degree-course programs. Upon completion of these requirements, they are to prepare, in keeping with the requirements of their respective concentrations, a program for their junior and senior years, which must be approved by their major professor.

Field Experience

Two or more of the courses included in the major, one of which shall be AET 313, will normally be taken during the junior year. This will make it possible to provide for one summer of field experience, under supervision, to be completed prior to registering for AET 314, which is a course that will normally be taken during the senior year. Field experience for a period of two or more months, under an approved county extension agent or some other professional Cooperative Extension Service employee, is desirable in this concentration.

Concentration in Agricultural Extension

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 100	5
PCS 127-127L	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L, 102-102L or BOT 121-121L, 122-122L	10
Selected courses in the agricultural sciences	20

Junior and Senior Years

Science Option

Major: AET 313, 314; SOC 431 or 435 and EPY 304	20
Science selections: MIB 350-350L; BOT 380-380L; PAT 353-353L; ENT 374-374L; STA 200; CHM 261 and 261L	30
First Minor: AGY 321 or 334 and 458 or 459-459L	10
Second Minor: May be in one department in the University.	10
Special requirements: JRL 385, AEC 401	10
Electives: To be selected with the objective of providing a well-rounded program for the individual. Must be approved by the major professor and may be chosen from the offerings of any department of the University.	25

Administration Option

Major: AET 313, 314; EPY 304; SOC 431 or 435	20
AEC 304, 408, 467	15
Business Administration: ACC 110, BL 370, and an additional 10 hours approved by faculty advisor	20
Science selections: MIB 350-350L; ENT 374-374L; CHM 261 and 261L; HOR 300	5
Special requirements: STA 200; AEC 469 or FIN 330	10
Electives: To be selected with approval of faculty advisor	25

Agricultural Journalism

There is a demand for College of Agriculture graduates trained in communications. Arrangements have been made with the

School of Journalism and Mass Communication for students in the College of Agriculture to obtain a major in agricultural journalism.

Agricultural Journalism majors are expected to maintain a grade point average of at least 2.50. Those who fall below this level are classified as General Agriculture. Freshmen are required to be able to type at least 40 words per minute by the end of their first year, and transfer students by the end of their first quarter. All majors are required to pass an English Proficiency test by the end of their first year.

Concentration in Agricultural Journalism

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L, 112 and 112L	10
MAT 100	5
PCS 101	5
AREA IV COURSES RELATED TO MAJOR	25
BIO 101-101L, 102-102L	10
JRL 101, 260, 351	15

Junior and Senior Years

Major (1) College of Agriculture	
Forty hours in agricultural sciences numbered 200 or above, selected with the advisor to make a logical whole	40
Major (2) Journalism	
35 hours in journalism courses numbered 200 or above, selected with the advisor to make a logical whole	35
Electives	30

Agronomy (AGY)

Agronomy consists of crop and soil sciences and, therefore, applies to all fields of agricultural endeavor and to the total environment of man. It includes the breeding, production, management, pest control, physiology, ecology, climatology and utilization of crops, along with the conservation, genesis, classification, mineralogy, microbiology, physics, fertility, and chemistry of soils.

Career Opportunities

Students majoring in agronomy are prepared for employment in farming, agribusiness, ex-

periment stations, U.S. Department of Agriculture, private research, college teaching, seed industry, environmental protection, conservation and other related fields. They are trained as specialists in plant breeding, farm management, turf management (golf greens, public grounds, etc.), weed control, seed technology, crop physiology and climatology, fertilizers, soil conservation, soil microbiology, soil physics, soil chemistry, land and recreational management, extension specialists in crops and soils, and technical representatives for private companies.

Concentration in Agronomy

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 109 or 116	5
PCS 127-127L or equivalent	5
AREA IV COURSES RELATED TO MAJOR	30
AGY 201-201L, 305-305L	10
BIO 101-101L, 102-102L or BOT 121-121L, 122-122L	10
To complete requirements, elect from ACC 110, 111, 116; AS 201-201L; AEC 210; CHM 123 and 123L, 240 and 240L, 261* and 261L, 280 and 280L; CSC 201; DS 381; ECN 105; GLY 125-125L; GGY 101, 102, 104, 120-120L, 121-121L; HOR 300; MAT 116, 253, 254; MS 209; PCS 128-128L, 229-229L; PS 202-202L; STA 200	10
Electives	10

Junior and Senior Years

General Agronomy—Crop and Soil Management

This major is designed to provide specialized training in soil management and crop production with sufficient latitude in agronomy electives to prepare the student for careers in agricultural industries and business, commercial seed production, soil conservation, soil survey, land appraisal, agricultural extension, and farm management.

	HOURS
Major: AGY 427 (2 hours), 321, 434-434L, 459-459L and 5 hours from AGY 334-334L, 335, 369, 425, 434-434L, 458, 466; AGY (HOR) 466L	22

Science requirements:

GEN 358; PAT 353-353L; ENT 374-374L; BOT 380-380L and 5 hours from BIO 350; BOT 465-465L; PAT 356-356L; MIB 350-350L	25
Approved electives**:	
AEC 300, 301, 304, 364, 393; ET 328, 360, 365, 380; AET 313, 314; AS 310, 332, 360-360L, 361-361L; ACC 110, 111; BL 270-270L; INS 381; MAN 351	33
Electives	20

Crop Science Option

The crop science option is designed for students wishing to specialize in crops or it qualifies students for further training leading to advanced degrees. This concentration is designed for students who wish to continue studies at the graduate level with specialization in one or more of the following areas: physiology, breeding, ecology, climatology or production and utilization of crops, and turf management.

	HOURS
Major: AGY 427 (2 hours), 434-434L, 459-459L and 321 or 334-334L or 335, and 10 hours from AGY 369, 404-404L, 411-411L, 425, 454-454L, 458, 460, 464, 466, 467-467L; AGY(MIB) 461-461L; AGY(HOR) 466L	27
Science requirements: GEN 358; ENT 374-374L; PAT 353-353L; BOT 380-380L; and 5 hours from CHM 123 and 123L, 241 and 241L, 280 and 280L; BOT 431-431L, 440-440L, 465-465L; PAT 356-356L, 425-425L, 428-428L; BCH(BIO) 310; BIO 350; MIB 350-350L	25
Approved electives**:	
CSC 500; HOR 362, 402; ET 303, 307, 360, 365, 380; AEC 300, 301, 304; AS 332, 360-360L, 361-361L; PAT 430; CLC 310	28
Electives	20

*If not taken as part of Area II, this course must be taken as part of Area IV. CHM 240 and 240L or 340 and 340L may be used for 261 and 261L.
**Above optional courses not used for major and science requirements may be used as special electives.

Soil Science Option

The soil science option is designed for students wishing to specialize in soils or it qualifies students for further training leading to advanced degrees. This concentration is designed for students who wish to continue studies at the graduate level with specialization in one or more of the following areas: classification, genesis, mineralogy, microbiology, physics, conservation, fertility or chemistry of soils.

	HOURS
Major: AGY 427 (2 hours), 454-454L, 459-459L, 460, 467-467L, AGY(MIB) 461-461L	27
Science requirements: GEN 358; MIB 350-350L; BOT 380-380L and 10 hours from CHM 123 and 123L, 241 and 241L, 280 and 280L, 341 and 341L, 390, 391, 395; ENT 374-374L; BOT 465-465L; PAT 353-353L, 356-356L, 428-428L; BCH(BIO) 310; PCS 229-229L; MAT 253, 254	25
Approved electives: AGY 321, 369, 425, 434-434L, 458, 462, 466; AGY(HOR) 466L; GLY 125-125L, 126-126L, 321, 405, 430; CSC 500	28
Electives	20

Conservation Option

The conservation option is designed to provide training in conservation and development of the soil and associated natural resources. It prepares students for careers in land use planning, area development and conservation of natural resources for a quality environment and also provides sufficient background for careers in government services, agricultural industries, and business.

	HOURS
Major: AGY 427 (2 hours), 454-454L, 458, 459-459L, and 5 hours from AGY 321, 369, 334-334L, 335, 425, 434-434L, 460, 462, 464, 466; AGY(MIB) 461-461L	22
Science requirements: GEN 358; ENT 374-374L; PAT 353-353L; and 10 hours from CHM 123 and 123L, 241 and 241L, 280 and 280L; MIB 350-350L; BOT 380-380L, 465-465L; PAT 356-356L, 428-428L; BCH (BIO) 310; BIO 350	25

Approved electives*: BL 270-270L; MAN 351; MKT 360; ET 310, 328; AEC 300, 301, 304, 364, 393; FRS 573; GLY 125-125L, 321; GGY 120-120L, 402, 410, 420-420L; REC 387, 535; AS 332; HOR 300; CSC 500	33
Electives	20

Turf Management

This major is designed to provide specialized training in plant science with emphasis upon turf grasses.

	HOURS
Major: AGY 321, 369, 427 (2 hours), 434-434L, 459-459L	22
Science requirements: BOT 380-380L; PAT 353-353L; GEN 358; ENT 374-374L; and 5 hours from BOT 465-465L; MIB 350-350L	25
Approved electives: HOR 315 or 325; HOR 362, 368 or 370AB, 430; AGY 391; PAT 425-425L, 430; ET 310, 360; AMT 200; REC 387, 535; MAN 351; ACC 110 or 116	33
Electives	20

Business Option

This major is designed for students who wish to have a basic background in agronomic science with additional training in Economics and Business Management. This concentration is designed for students who plan to be involved in agribusiness.

	HOURS
Major: AGY 427 (2 hours), 434-434L, 459-459L, and 10 hours from AGY 321, 334-334L, 335, 369, 425, 454-454L, 458, 460, 462, 463, 464, 466, 467-467L; AGY (MIB) 461-461L; AGY(HOR) 466L	22
Science requirements: GEN 358; ENT 374-374L; PAT 353-353L; BOT 380-380L and 5 hours from BOT 465-465L; PAT 356-356L; MIB 350-350L; BIO 350; BCH (BIO) 310; GGY 410; CHM 123 and 123L, 241 and 241L, 280 and 280L; MAT 207, 253; PCS 128-128L, 229-229L; GLY 125-125L; MS 312	25

*Above optional courses not used for major and science requirements may be used as special electives.

Approved Electives: AEC 300; MKT 360 or AEC 304; BL 270-270L or AEC 305; MAN 351; FIN 326 or AEC 469; AEC (FIN) 487; and at least 10 hours from AEC 301, 302, 351, 400, 451; INS 381	33
Electives	20

Animal Science (AS)

The courses offered in animal science are designed to give students basic training in the production of beef cattle, swine, and horses. While most of the courses offered deal with the more practical phases of selection, breeding, feeding, and management, several courses of a technical nature are offered for those students who desire to enter some specialized type of work or who plan to follow a program of graduate study.

Career Opportunities

The courses are especially planned for students who expect to become livestock farmers, farm managers, herdsman, animal science specialists, county agents, vocational agriculture teachers, college teachers, or experiment station workers. They are also suitable for students who intend to pursue careers in agribusiness with breed associations, feed manufacturers, meat packing companies, livestock marketing, livestock equipment and supply companies, livestock journals, or related fields.

Concentration in Animal Science

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L, 112 and 112L	10
MAT 100	5
PCS 101	5
AREA IV COURSES RELATED TO MAJOR	35
CHM 261 and 261L, 240 and 240L	5
BIO 101-101L, 102-102L or BOT 121-121L, 122-122L	10
AGY 201-201L, 305-305L	10
AS 201-201L	5
To complete requirements elect from:	
ACC 110, 111; ET 310, 328, 360, 365, 380; CHM 123 and 123L, 280 and 280L; ENT 325-325L, 374-374L; MAT 109, 116; PCS 127-127L, 128-128L; STA 200	5

Junior and Senior Years

A. Required Courses*	49
AS 310 Introduction to Genetics of Livestock Improvement	5
AS 320 Types, Classes, Grades and Evaluation of Livestock	3
AS(DS) 330 Fundamentals of Animal Nutrition	5
AS 331 Feeds and Feeding	5
AS 340 Physiology of Reproduction in Farm Animals	5
AS 360-360L Beef Cattle Production and Management	5
AS 361-361L Swine Production and Management	5
AS 381 Animal Science Seminar	1
GEN 358 Principles of Genetics	5
VPH 310 Elements of Physiology	5
FS 365 Meat and Animal Evaluation	5

B. Recommended electives 51

A list of recommended electives is available in the department for each of the following Animal Science options:

Beef Cattle Production and Management
Swine Production and Management
Animal Agribusiness Management and Sales
Science (General, Genetics, Nutrition, or Physiology)
Animal Science—Pre-Veterinary Medicine

Double majors with other departments are available

TOTAL JUNIOR-SENIOR HOURS	100
MINIMUM HOURS FOR GRADUATION	195

Botany (BOT)

A major in botany is available to students in the College of Agriculture who are interested in plant sciences. The curriculum emphasizes the biology of plants and aims at a broad understanding of plant structure, function, diversity, and interactions. In our changing world an understanding of and solution to plant-related problems will require a comprehensive knowledge of basic biological principles.

*A 2.0 average in animal science courses will be required for graduation.

Career Opportunities

Botany majors are well qualified to continue study in graduate school or pursue jobs as staff biologists with federal or state agencies; as research assistants or laboratory technicians for governmental organizations, educational institutions, or commercial companies; as technical or sales representatives for commercial companies; or in secondary education.

Concentration in Botany

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 253	5
PCS 127-127L	5
AREA IV COURSES RELATED TO MAJOR	30
MAT 254	5
PCS 128-128L	5
BIO 101-101L, 102-102L or BOT 121-121L, 122-122L	10
CHM 240 and 240L, 241 and 241L	10

Junior and Senior Years

Major: BIO(BCH) 310, BIO(MPG) 320, BIO 330 or 340, or BOT 440-440L; BIO 350 or 360; BOT 410-410L or BOT(PAT) 420-420L, BOT 423-423L, or 431-431L, 465-465L, 483-483L	25
Science Selections: From approved botany courses or related science departments	30
Minor: Must be in College of Agriculture	10
Electives	25

Biochemistry (BCH)

This undergraduate major emphasizes both the physical and biological sciences as preparation for graduate study or for employment in business, industry, or government. Included in the curriculum are both basic and applied courses in the chemistry of living organisms and vital processes of plants and animals.

Concentration in Biochemistry

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 109	5
PCS 127-127L	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L, 102-102L	10
CHM 123 and 123L, 280 and 280L	10
PCS 128-128L, 229-229L	10

Junior and Senior Years

Major: CHM 240 and 240L, 241 and 241L, 390 and 391, or 395; BCH(BIO) 310, BCH 401, 402, 403	35
Science Selections: From approved departments	35
Minor: Must be in College of Agriculture	20
Electives	25

Biological Science (BIO)

This major provides preparation for graduate or professional study as well as for employment in business, industry, or government. Both basic and applied courses in the biological sciences are included in this curriculum.

Concentration in Biological Science

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 109, 116 or higher	10
AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L, 102-102L	10
PCS 127-127L, 128-128L	10
Electives	10

Junior and Senior Years

BIO(BCH) 310, BIO(MPG) 320, or GEN 358, BIO 330, 340, 350, 360, 370, 380 (any two)	10
Minor: 25 hours of senior division courses in the College of Agriculture	25

Special requirements: CHM 240 and 240L, 241 and 241L; MIB 350-350L; with assistance from the advisor, select 15 hours from the following courses: AS(DS) 330; AS 331; BIO(MPG) 321; BIO 331, 351; CHM 123 and 123L, 280 and 280L; ENT 374-374L, 376; PAT 353-353L; PS 380-380L, 482-482L; VAR 309; VPH 310; and ZOO 327-327L, 345-345L, 355, 390-390L.	25
Electives	25

Chemistry (CHM)

Instruction in this division is designed primarily to fit the needs of agriculture students. By means of lectures, recitations, and laboratory work, students are taught the fundamental chemical principles underlying and controlling plant and animal life.

Career Opportunities

The curriculum for majors in chemistry is designed to prepare students for professional employment in experiment stations, in governmental and industrial chemical or biochemical laboratories, and as chemical or biochemical staff members of colleges, universities, hospitals, and allied chemical industries. This curriculum is highly recommended for students seeking professional status and for those who plan to do graduate study. For course descriptions, look under chemistry in the College of Arts and Sciences.

Concentration in Chemistry

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 128-128L	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L, 102-102L	10
PCS 229-229L	5
CHM 123 and 123L, 280 and 280L	10
MAT 253	5

Junior and Senior Years

For certification by the American Chemical Society for the training of chemists.

Major: CHM 340 and 340L, 341 and 341L, 342 and 342L, 381 and 381L, 402L, 426, 427, and 491ABC, 496ABC, 580 and 580L, and any two from CHM 347, 348, 349, 430, 431, 432, 441 and 441L, 444, 492, 493, 494, 495, 497, 581 and 581L, 585	54-58
Electives in the College of Agriculture	32-36
MAT 254, 255	10
For non-certification.	

Major: At least 30 hours at the 300 level or higher and at least 20 hours in major subject to be selected with consent of advisor.	50
MAT 254, 255	10
Electives in the College of Agriculture	40

NOTE: A scholastic average of 2.5 must be made for the freshman and sophomore years in order to continue this curriculum. An average of 2.5 must be maintained for the entire four years.

Dairy Science (DS)

The dairy industry in Georgia is an important segment of the agricultural economy. There is much demand for trained personnel in the production and manufacturing phases of the thriving dairy industry. The modern industry requires personnel trained in business, economics, and management as well as the traditional dairy science courses. A work-internship program is available to provide practical training for students.

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L, 112 and 112L or 121 and 121L, 122 and 122L	10
MAT 100	5
PCS 101	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L, 102-102L or BOT 121-121L, 122-122L or ZOO 326-326L, 327-327L	10
CHM 240 and 240L or 261 and 261L	5

To complete requirements, elect from: ACC 110, 111; AGR 101, 301; AEC 210; AGY 201-201L, 305-305L; AS 201-201L; CHM 123 and 123L, 240 and 240L, 280 and 280L; ET 310, 328, 360, 365, 380; ENT 374-374L; GGY 101, 102, 104, 120-120L, 121-121L, 122-122L; GLY 125-125L, 126-126L; MAT 109, 116, 253; PS 202-202L; PCS 127-127L, 128-128L; STA 200

15

Concentration in Dairy Production

Junior and Senior Years

Dairy production prepares students for careers in dairy farm operation as herdsman, manager, or owner; in sales of equipment or feed; in field services with processing plants, feed manufacturers, breed associations, and marketing agencies; in college research and teaching.

	HOURS
Required Courses:	52
DS 300-300L Fundamentals of Milk Processing and Production	5
DS 310 Dairy Cattle Breeding	5
DS(AS) 330 Fundamentals of Animal Nutrition	5
DS 326 Dairy Cattle Evaluation and Selection	3
DS 362 Dairy Cattle Production and Management	5
DS 381 Dairy Seminar	1
DS 442-442L Milk Secretion	3
DS 463 Advanced Dairy Cattle Feeding and Management	5
AS 331 Feeds and Feeding	5
AS 340 Physiology of Reproduction in Farm Animals	5
GEN 358 Principles of Genetics	5
VPH 310 Elements of Physiology	5
Recommended Electives	48

A list of recommended electives is available in the department for each of the following Dairy Science options:
 Dairy Cattle Production and Management
 Dairy Agribusiness Management and Sales
 Science (General, Genetics, Nutrition, or Physiology)
 Dairy Science—Pre-Veterinary Medicine
 Double majors with other departments are available
 TOTAL JUNIOR-SENIOR HOURS 100
 MINIMUM HOURS FOR GRADUATION 195

Concentration in Dairy Manufacturing

Junior and Senior Years

Dairy manufacturing prepares students for careers in dairy plant operations such as production, supervision, or management; sales of products, supplies, and equipment; quality control; college teaching, research, extension, or public relations.

	HOURS
Required Courses:	38
DS 300-300L Fundamentals of Milk Processing and Production	5
DS 324 Dairy Products Judging and Grading	3
DS 352 Dairy Chemistry	5
DS 353 Market Milk and Related Products	5
DS 354 Dairy Plant Management	5
DS 355 Ice Cream Making	5
DS(MIB) 357 Dairy Microbiology	5
MIB 350-350L Introductory Microbiology	5
Electives for Major Concentration:	20
ACC 110, 111	
AEC 300, 304, 467, 469	
BL 270-270L	
CHM 123 and 123L, 280 and 280L	
DS 362	
ENT 374-374L, 384-384L, 477-477L	
MIB(DS) 452-452L, 453-453L	
Recommended Electives, approved by advisor	42
TOTAL JUNIOR-SENIOR HOURS	100
MINIMUM HOURS FOR GRADUATION	195

Entomology (ENT)

Students who specialize in entomology receive training in the identification of insects and other arthropods, and the damage they cause, their structure, habits, and control.

Career Opportunities

A knowledge of insect control is necessary for the successful growing of either plants or animals and should, therefore, be a part of the training of all agricultural scientists. In addition, many positions in teaching, research, control, and extension entomology exist in colleges and universities, experiment stations, state departments of entomology, the United States Department of Agriculture, the United States Public Health Service, and in various private concerns doing pest control or insecticide compounding or manufacturing. Study leading to advanced degrees and to higher teaching and research positions is also available.

Concentration in Entomology

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L, 112 and 112L or 121 and 121L, 122 and 122L	10
MAT 100	5
PCS 101	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L, 102-102L	10
To complete requirements, elect from:	
BOT 121-121L, 122-122L; ZOO 326-326L; GLY 125-125L; GGY 120-120L; STA 200, 221, 222; CHM 261 and 261L	20

Junior and Senior Years

Science Option

Major: ENT 325-325L, 393, 460-460L and either 384-384L or 401-401L or 415-415L and additional courses with consent of entomology advisor	25
Science selections: MIB 350-350L; GEN 358 and additional courses with consent of entomology advisor. Suggested selections: MAT 253; ZOO 408-408L; BOT 380-380L, 465-465L; GGY 120-120L; GLY 125-125L; BCH(BIO) 310; BIO 350; STA 200; CSC 500; AGY 305-305L; CHM 261 and 261L	45
Special requirement: Ten hours of a foreign language	10
Electives	20

Administrative Option

Major: ENT 325-325L, 384-384L, 393, 460-460L, either 401-401L or 477-477L and additional courses selected with consent of entomology advisor.	25
Agricultural Economics: AEC 300, 304, 393	15
Business Administration: ACC 110, 111 or 116; MAN 351, and an additional 10 hours in business administration approved by advisor	20
Science selections: PAT 353-353L; GEN 358	10

Special requirements: STA 200 and CSC 500 or STA 221, 222; AEC 469 or FIN 330	10
Electives	20

Food Science (FS)

The worth of the food processing industry is about a hundred billion dollars in the United States alone, a value that is approximately four times larger than the next largest manufacturing industry. There is a constant demand for college graduates, both men and women, with training in food science. This demand is created by the high percentage of foods marketed in processed form rather than as fresh or raw products. Improvements and new developments are the lifeblood of the American competitive system. Consequently, the food and related industries, such as the packaging industry, employ many food technologists.

Curriculum

The food science department offers both undergraduate and graduate instruction designed to give basic and technical training in preparation for work in such industries as meat and poultry processing, canning, freezing, pickling, preserving, and the preparation and preservation of specialty food products. Superior students are encouraged to undertake graduate study since great opportunities are now open to food scientists with advanced degrees.

Career Opportunities

Opportunities open to graduates in the food or allied industries include research; development and production work; technical sales within the food industry or in closely related areas such as the container and equipment manufacturing fields; extension work; research work in experimental stations or in other branches of government; food consulting and promotional work with public or private utilities.

Concentration in Food Science

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 109	5
PCS 127-127L	5

AREA IV COURSES RELATED TO

MAJOR	30
BIO 101-101L, 102-102L; or BOT 121-121L, 122-122L	10
CHM 240 and 240L	5
STA 200	5
Electives	10

Junior and Senior Years

Required Courses: FS 315, 367, 409-409L, 411-411L, 414-414L, 419, 422-422L, 423-423L, FS(MIB) 407-407L; MIB 350-350L; BCH(BIO) 310	51
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Electives: Some of the electives must be used to complete one of the following options 45

Science (option) (25 hours)
Required: CHM 241 and 241L; PCS 128-128L plus 15 hours of science courses approved by advisor.

Food Engineering (option) (40 hours)
Required: FS 412-412L, 413; PCS 128-128L; MAT 253 plus 15-20 hours of Agricultural Engineering, Mathematics, or Computer Science courses approved by advisor.

Technology (option) (25 hours)
Required: FS 368-368L or FS(PS) 386; FS 412-412L, 425 plus 12 hours of courses in technology of agricultural products approved by advisor.

Meats (option) (30 hours)
Required: FS 365-365L, 368-368L, 412-412L, 424-424L plus 10 hours of courses in meats or related subjects approved by advisor.

General Agriculture

This program is designed for those students who want a general program in the agricultural sciences and who do not want to specialize in one of the animal, plant, food, economics or engineering sciences.

Career Opportunities

Opportunities are open to graduates in the production, marketing, processing, and distribution of agricultural products and in many governmental agencies.

Concentrations in General Agriculture

Freshman and Sophomore Years

See General Core Curriculum and/or consult advisor.

AREA II MATHEMATICS AND NATURAL SCIENCES

	HOURS
CHM 111 and 111L, 112 and 112L or 121 and 121L, 122 and 122L	20
MAT 100 or 109 or 116	10
PCS 101 or 127-127L	5

AREA IV COURSES RELATED TO

MAJOR	30
BIO 101-101L, 102-102L or BOT 121-121L, 122-122L	10
ACC 110 or 116	5
STA 200	5
Electives	10

Junior and Senior Years

Agriculture Requirements: AS 201-201L or DS 102 or PS 201ABC (any two); AGY 201-201L or HOR 362 (any one); AEC 300, 302, and 304; GEN 358; ENT 374-374L; PAT 353-353L; AGY 305-305L 46-48

Elect from: AS(DS) 330, AS 331; ET 328, 360, 365, 380; AGY 321, 459-459L; FS 367; PS 371 25

Free electives 29

Horticulture (HOR)

The horticulture curriculum is designed to instruct students in the application of basic principles and theories of plant propagation and physiology to the culture, production, and postharvest physiology of fruits, vegetable crops, and ornamental plants and flowers. Options in the curriculum allow the student to concentrate on one major crop area or to select courses in a number of crops.

Career Opportunities

Students who specialize in horticulture and who work closely with their advisor can achieve the academic requirements necessary to enter any one or more of the following fields: management for the production, marketing or postharvest of vegetables, fruits and ornamental plants and flowers; salesman with commercial company; field advisor or manager of greenhouses, parks, arboretums, botanical gardens, and garden centers; teacher in high schools or technical schools; horticultural journalist; and county agent. A student may prepare for a career in horticultural research or entrance into graduate study.

Curriculum

The curriculum is designed with considerable flexibility so that the student can achieve a

B.S.A. degree with emphasis on any area of horticulture. Through the judicious selection of electives, students can broaden their background in business administration, management, education, journalism, or any of the physical or biological sciences.

Concentration in Horticulture

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L, 112 and 112L or 121 and 121L, 122 and 122L	10
MAT 100	5
PCS 101	5

AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L, 102-102L or BOT 121-121L, 122-122L and CHM 261 and 261L	15
To complete requirements, elect from: AGY 201-201L; CHM 123 and 123L, 240 and 240L, 241 and 241L, 280 and 280L; BCH(BIO) 310; ACC 110, 111; ET 310, 365; MAN 201; MAT 253	15

Junior and Senior Years

Science Option	
Major: HOR 315, 325, 362, and 421	20
Special Science Requirements: BOT 431-431L and 380-380L; ENT 374-374L; PAT 353-353L; GEN 358	25
Free Electives	20
Additional courses	35
Ornamental Option Additional courses	35
Horticulture Science Option Additional courses	35

Microbiology (MIB)

Career Opportunities

Microbiology is recommended for students who wish to prepare themselves for professional schools, graduate study or for employment in the fields of bacteriology, microbiology, mycology, or nematology.

Concentration in Microbiology

This concentration is an interdisciplinary program utilizing microbiology courses from the

Colleges of Agriculture, Arts and Sciences, and Veterinary Medicine.

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 116 or 253	5
PCS 127-127L	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L, 102-102L or BOT 121-121L, 122-122L	10
CHM 240 and 240L and 241 and 241L	10
PCS 128-128L	5
Courses approved by department	5

Junior and Senior Years

Major: MIB 350-350L; DS(MIB) 357 or 452-452L or EHS(MIB) 459-459L; FS(MIB) 407-407L or 421-421L; AGY(MIB) 461-461L	20
Science selections: 25 hours selected upon approval from: GEN 358 or BIO(MPG) 320; PAT 353-353L; AS(DS) 330 or FDN 351; VPH 310 or BOT 380-380L; BCH(BIO) 310; CHM 123 and 123L	25
Special requirements: CLC 310 and at least 20 hours from MIB 409, 410-410L, 414, 422-422L, 462-462L, 470-470L, 480 and 480L; or MMB 410-410L, 422, 439-439L, 450	25
Electives	30
TOTAL	100

Plant Pathology (PAT)

A student in the Department of Plant Pathology may choose an option in either plant pathology or plant protection. The student choosing the plant pathology option concentrates study in both the science and art of plant pathology. This includes basic training in the study of plant diseases with choices of specialization in fungal, viral, bacterial, and nematode diseases, or disease control. The plant protection option is designed to give the student multidisciplinary training essential for the recognition, management, and control of major plant pests, mainly disease organisms, insects, and weeds, with the minimum use of

pesticides. This program also emphasizes the use of economics, computer science, and farm management.

The programs of study in either plant pathology or plant protection are broad enough to provide the training in the basic sciences that will enable graduates to take advantage of a variety of opportunities in agriculture and related industries and also to leave open the option of continued study for advanced degrees in graduate school. They are flexible enough to permit the student to explore a variety of special fields according to his or her interests. Following introductory courses, students may choose among advanced courses in genetics, plant breeding, nematology, bacteriology, mycology, virology, crops pathology, and disease diagnosis and control.

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 100	5
PCS 101	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L, 102-102L or BOT 121-121L, 122-122L	10
To complete requirements, elect from: AGY 201-201L, 305-305L; CHM 123 and 123L, 240 and 240L, 241 and 241L, 261 and 261L, 280 and 280L; MAT 109 or 116, 253; STA 200	20

Junior and Senior Years

Option in Plant Pathology

Major: PAT 353-353L, PAT(BOT) 420-420L, and two from PAT 406-406L, 425-425L, 428-428L; and ENT 477-477L	20
Science Requirements: BOT 380-380L; CHM 240 and 240L, 241 and 241L; GEN 358 and MIB 350-350L	25
Science selections: any three from AEC 300; BCH(BIO) 310; CHM 123 and 123L; AGY 404-404L, 411-411L; ENT 374-374L; AGY 434-434L	15
Electives related to major	20
Unrestricted electives	20
TOTAL	100

Option in Plant Protection

Major: AGY 434-434L; ENT 374-374L, 477-477L; PAT 353-353L and 428-428L	25
Science requirements: AEC 300; AGY 201-201L, 305-305L; BIO 350; BOT 380-380L; CHM 261 and 261L; GEN 358; and STA 200 or equivalent courses	40
Electives	35
TOTAL	100

Poultry Science (PS)

The courses in the poultry science department are designed to prepare the student for work in the poultry industry, or allied fields, and to pursue graduate study.

Career Opportunities

Students who major in this department receive training that will prepare them for work in the following fields:

1. Commercial poultry production
2. The feed industry; diet formulation, sales and service, and quality control
3. The processing industry; plant operation and personnel management
4. Experiment station and extension specialist
5. The hatchery business; incubation and hatching egg production
6. Advance study leading to the M.S. and Ph.D. degrees in the fields of poultry nutrition, genetics, market products technology, disease and parasites; physiology and production economics.

Concentration in Poultry Science

Freshman and Sophomore Years

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L, 112 and 112L, or 121 and 121L, 122 and 122L	10
MAT 103 or 109 or 116	5
PCS 101 or 127-127L	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L, 102-102L	10
CHM 240 and 240L or 261 and 261L	5
PS 202-202L	5
Electives	10

Junior and Senior Years

Science Option

Major: PS 360, 371, 372, 375, 379, 380-380L, PS(FS)386 and AM 373	36
Special requirements: Elect 10 hours from: CHM 123 and 123L, 241 and 241L, 280 and 280L or BCH(BIO) 310; elect 10 hours from ACC 110 or 116, AEC 300, or STA 221; and 19 hours of science courses selected with approval of the faculty advisor	39
Electives	25
TOTAL	100

Administration Option

Major: PS 360, 371, 372, 375, 379, 380-380L; PS(FS) 386 and AM 373	36
Special Requirements: ACC 110 or 116; AEC 300; STA 221 and 222; and 19 hours of approved administrative courses selected with the approval of the faculty advisor	39
Electives	25
TOTAL	100

Technology Option

Major: PS 360, 371, 372, 375, 379, 380-380L; PS(FS) 386 and AM 373	36
Special Requirements: ACC 110 or 116; AEC 300; and 29 hours of science courses selected with the approval of the faculty advisor	39
Electives	25
TOTAL	100

Pre-Veterinary Medicine

This program is designed for those students who wish to obtain both the B.S.A. and D.V.M. degrees. Under this program a student may, after the successful completion of the first year at The University of Georgia College of Veterinary Medicine, receive the B.S.A. degree. The student considering this option should realize that competition for admission to the College of Veterinary Medicine is such that there are three or four persons applying for each available position. The student should have one or more alternative careers in mind in the event that he/she is not accepted. It is strongly recommended that the student be enrolled in an undergraduate degree program. The following courses (or their equivalent) are required in satisfying the minimum pre-veterinary medical curriculum:

	HOURS
English (ENG 101 and 102)	10
Physics (PCS 127-127L and 128-128L)	10
Biology (BIO 101-101L and 102-102L) or (BIO 111-111L and 112-112L)	10
Advanced biological science course	5
General Microbiology (MIB 350-350L)	5
General Chemistry (CHM 121 and 121L and 122 and 122L)	10
Organic Chemistry (CHM 240 and 240L and 241 and 241L) or (CHM 340 and 340L and 341 and 341L)	10
Biochemistry (BCH(BIO) 310)	5
Humanities and Social Studies ¹	20
Fundamentals of Animal Nutrition (AS(DS) 330)	5
Electives ²	15
TOTAL	105

Selection of students is the responsibility of a representative committee of the faculty of the College of Veterinary Medicine appointed by the dean of the College. The committee considers applications of candidates who have met the minimum academic requirements, including successful completion of three years of college study, or its equivalent, in an accredited college. The committee also considers other factors such as character, experience with animals, general knowledge, motivation, activities and achievements, health, and personality.

Upon satisfactory completion of the minimum requirements, a student may apply for admission to the College of Veterinary Medicine. Students with academic records of 2.7 or above should apply during the junior year for acceptance at the beginning of the senior year. Any student who is registered in the College of Agriculture may, upon completion of the pre-veterinary requirements, continue with the agricultural curriculum. Such students will be able to apply all credits earned to requirements for the B.S.A. degree.

Students who are admitted to the College of Veterinary Medicine and who have completed at least 45 hours of courses numbered 200 or above, including 20 or more hours in the College of Agriculture, in residence at The University of Georgia, may receive the degree after successful completion of the first year

¹POL 101, HIS 251 or 252, speech and an additional five hours. Political science and history can be satisfied by exam and if satisfied by this means, one substitutes any other course in the humanities or social sciences.

²Students who have a limited background with animals should consider the following electives: AS 201-201L, AS(DS) 330, DS 102, PS 202 and GEN 358.

toward the D.V.M. degree. Because more students apply than can be accepted, students are encouraged to consider one or more alternative careers and to complete the requirements for a major in agriculture in addition to completing the minimum pre-veterinary courses.

Community Rural Development

A concentration in this area is available within the Bachelor of Science degree in agriculture. The concentration is offered in the Department of Agricultural Economics. (See "Concentration in Rural Community Development.")

Employment opportunities for men and women with this major concentration are available in rural development centers, chambers of commerce, cooperative extension, economic development commissions, area planning commissions, and other state and federal agencies. This concentration would also prepare students for graduate work in rural and community development, extension education, agricultural economics, sociology, adult education, or public administration.

BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING DEGREE REQUIREMENTS

Agricultural engineering is the branch of the engineering profession which relates and applies engineering principles, techniques, and technology to the appropriate needs of agriculture and the countryside. The economical and efficient production of food and fiber, the processing of food and fiber, and the orderly and planned development of the countryside are principal focal points. The engineering technological services involve microprocessor-based controls, data collection and processing, field mechanization, irrigation, waste management, agricultural structures, soil and water management, and energy conservation and use. Such varied interests as mechanical harvesting, poultry housing, agricultural processing plants, and the measurement and control of soil, air, and water quality are encouraged both in theory and in design courses so that the graduate is prepared to meet the needs and challenges of modern agriculture.

Agricultural Engineers create, modify, and develop new designs for individual components and for entire systems for agricultural production and processing. These include

mobile mechanical power units, field machinery, solar collectors, water impoundments, controlled environments for structures, computerized controls and records, safety accessories and materials handling systems.

Agricultural Engineering Program

The courses comprising the four-year professional curriculum—Bachelor of Science in Agricultural Engineering—provide well-balanced training in the basic sciences, engineering sciences, engineering design and analysis, the humanities, and the interrelationship between engineering and social science. The graduate receives academic preparation leading to the ability to plan and design appropriate engineering solutions. The curriculum is fully accredited by ABET (Accreditation Board for Engineering and Technology, Inc.) and graduating seniors are required to take the Fundamentals of Engineering Examination (EIT Exam) as their Exit Exam. They thereby qualify for EIT Registration if successful with the Exam.

The department also offers a program of graduate study leading to the Master of Science degree. The graduate program places emphasis upon advanced study in science and engineering and upon the methods and practices of engineering research.

Cooperative Plan

A cooperative plan is available to engineering students. The co-op student alternates work and academic quarters and is eligible to enter this plan after having completed a minimum of five academic quarters, one of which must have been on campus.

Career Opportunities

The need for trained engineers is critical. The number of graduates is about 40 percent short of the demand on a national basis. In general, BSAE graduates find employment about as follows: 65 percent are in industry with machinery companies, irrigation suppliers, food and feed processors, electric power suppliers, building material suppliers, etc.; 10 percent are in government service with the SCS, and ARS activities of USDA, and EPA and Geological Survey; 10 percent are engaged in teaching, research, or extension at colleges, universities and private industries, and 15 percent are self-employed either as consultants, contractors, manufacturers, or sales engineers.

Curriculum in Agricultural Engineering

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 253	5
PCS 137-137L (or 127-127L)	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L or BOT 121-121L	5
PCS 128-128L	5
MAT 254, 255, 358 or 401	15
To complete requirements, elect from AGY 305-305L; AEN 109; AEN 120 and 121	5

Junior Year

FALL	
AEN 350 Statics of Engineering	5
AEN 342 Computer Applications in Engineering	3
AEN 383 Electric Circuits	5
AEN 373 Thermodynamics	3

WINTER	
AEN 351 Dynamics of Engineering	5
AEN 384 Introduction to Micro-processor Systems	3
AEN 385 Electrical Machines	3
AEN 355 Strength of Materials	5
AEN 355A Strength of Materials Laboratory	1

SPRING	
AEN 356 Fluid Mechanics	5
AEN 374 Heat Transfer	5
AEN 387 Engineering Electronics	5
AEN 395 Engineering Economics	2

Senior Year

FALL	
AEN 362 Energy Conversion	3
AEN 325 Soil and Water Engineering	5
AEN 371 Agricultural Structure Design	5
AEN 441 Electrical Systems and Controls	
OR	
AEN 448 Instrumentation for Environmental Quality	5

WINTER	
AEN 381 Processing	3
AEN 370 Waste Management Principles and Practice	5

AEN 445 Countryside Engineering	
OR	
AEN 449-449L Design of Alternate Energy Systems	
OR	
AEN 480 Microprocessor Based Control Systems	5
Agricultural Science Elective	5

SPRING	
AEN 382 Management of Structural Environments for Agricultural Production	3
AEN 366-366L Machine Hydraulics	
OR	
Physical Science Elective	5
AEN 361 Management of Plant Environment	5
AEN 443 Mechanical Harvesting Systems	
OR	
AEN 444 Water Management Systems	5

Agricultural Mechanization Technology Program

The agribusiness mechanization program leads to the degree of Bachelor of Science in Agriculture with the aim of meeting the needs of agribusiness, B.S.A. (MT), for individuals interested in mechanization, business, and management. The program stresses the application of established principles and techniques of engineering, agricultural science, and commerce to the broad industry of agriculture. The senior division studies are divided equally among mechanization technology, agricultural science, and business science.

The graduates of the program are prepared to assume responsible positions in agribusiness and to provide leadership in our society. Job opportunities exist in industry, public service, agribusiness companies, and government as well as self-employment, including agricultural production.

Curriculum in Agricultural Mechanization Technology

See General Core Curriculum and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 100	5
PCS 127-127L	5

AREA IV COURSES RELATED TO MAJOR	30
BIO 101-101L or BOT 121-121L	5
PCS 128-128L	5
To complete requirements, elect from:	
MAT 109, 253; ET 310, 328, 360, 365, 380; AMT 200; AGY 201-201L	20

Junior Year

FALL	
ET 360 Farm Power Machinery	3
ET 310 Surveying	5
AMT 321 Hydraulics in Agriculture	5
CSC 500 Computer Programming	5

WINTER

ET 328 Soil and Water Technology	5
ET 365 Farm Buildings and Equipment	3
AMT 201 Construction Materials and Tool Processes	5
ACC 110 Principles of Accounting I	5

SPRING

ET 380 Farm Electrification	3
AMT 331 Structures and Environment	5
AEC 300 Economics of Agriculture: Theory of the Firm	5
MAN 351 Management and Organizational Behavior	5

Senior Year

FALL	
AMT 341 Handling and Processing Agricultural Products	5
BL 270-270L The Legal Environment of Business	5
AGY 201-201L Crop Science	5
Science Electives, Agriculture	5

WINTER

AMT 342 Utilization of Electric Power and Equipment	5
FIN 330 Financial Management	5
AGY 305-305L Principles of Soils	5
Science Electives, Agriculture	5

SPRING

AMT 351 Production and Harvesting Technology	5
MKT 360 Principles of Marketing	5
AEC 302 Economics of Agriculture: Aggregate Analysis	5

BACHELOR OF SCIENCE IN ENVIRONMENTAL HEALTH SCIENCE DEGREE REQUIREMENTS

Environmental health scientists are in demand

by governmental agencies, private industries and institutions. Opportunities for employment exist in the various specialized programs within public health agencies in such areas as food and milk technology, solid waste management, vector control, general sanitation engineering, and pollution control. Environmental scientists are employed in programs of water and air pollution control, quality control, industrial hygiene, and a variety of other activities by a significant number of agencies and commercial concerns.

The need for environmental scientists in Georgia is increasing constantly and employment, promotional, and professional opportunities for academically qualified personnel are increasing proportionately. The demand for trained environmental scientists, however, is not restricted to the state of Georgia. Due to the limited availability of college training programs for this field, numerous other states rely upon the resources of The University of Georgia for graduates in this subject matter area.

Program

The program outlined below is inter-departmental in nature and utilizes the available courses and special facilities of many departments. It should be emphasized that the first two years of the program can be completed at most junior colleges.

Curriculum

See General Core Curriculum and/or consult department.

AREA II MATHEMATICS AND NATURAL SCIENCES **20**

CHM 121 and 121L, 122 and 122L	10
MAT 109 or 116	5
PCS 127-127L	5

AREA IV COURSES RELATED TO MAJOR **30**

Two-course sequence: BIO 101-101L, 102-102L or BOT 121-121L, 122-122L	10
ZOO 212-212L	5
STA 200	5
ZOO 213-213L	5
CHM 240 and 240L or 241 and 241L	5

Junior and Senior Years

Required courses:	75
ENT 376	5
EHS 306, 325, 380AB, 409, 449 and EHS(MIB) 459	25
MIB 350-350L	5

DS(MIB) 452-452L	5
FS 367	5
MMB 422-422L and 480	10
Special requirements: To complete requirements, elect 20 hours from the following with the approval of the advisor: AGY 305-305L; BCH(BIO) 310, BIO 350; CHM 123 and 123L, 280 and 280L, 369; ET 310, 328; FS(MIB) 407-407L, 421-421L; FS 422-422L, 425; AMT 200; EIA 102; MAN 351; CSC 201; ENT 474-474L, 477-477L; DS 352; DS (MIB) 357; HED 301, 404; SED 445; EHS 370AB	
Free electives to complete BSEH degree requirements	25
TOTAL JUNIOR-SENIOR HOURS	100
MINIMUM HOURS FOR GRADUATION	195

COURSES OF INSTRUCTION

AGRICULTURE (AGR)

101. Orientation to Agriculture. 1 hour.

A course designed to aid agricultural freshmen and transfer students in making adjustments to college life at the University. (Open to students during their first quarter on the Athens campus.)

221. Agricultural Communications. 3 hours.

An overview of principles and practices of agricultural journalism in print and electronic media, advertising, and public relations. Agricultural communicators will discuss career opportunities in the media, industry, and government; types of work being done; knowledge and skills required; and the future of both scientific agriculture and journalism.

301. Agriculture and You. 5 hours.

A course designed to delineate modern agriculture and the integral role it plays in providing man a quality life. Attention is focused on the role of agriculture in economic development; the U.S. food and fiber production resource base; production methods, practices and standards; the marketing and

distribution system; man's dietary needs and consumption behavior; and the world food and fiber situation.

391. Applied Agricultural Science (Internship). 5 hours.

Prerequisite: Basic courses in the student's major, permission of department, and junior or senior standing.

This course provides educational experience in the operations and management of commercial firms.

496H. Independent Projects and Reading. 5 hours.

This course affords honors students of upper division standing the opportunity to engage in individual study, reading, or research projects under the direction of a project director.

497H. Independent Reading and/or Project. 5 hours.

Prerequisite: AGR 496H.

This course affords honors students of upper division standing the opportunity to engage in individual study, reading, or research projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

Prerequisite: AGR 497H. Senior standing and permission of department.

This course provides the opportunity for an Honors student to write an Honors thesis under the guidance of a faculty member.

AGRICULTURAL ECONOMICS (AEC)

210. Agricultural Economics. 5 hours.

A study of the principles of agricultural economics and the applications of these principles to the solution of agricultural and farm business problems.

300. Economics of Agriculture: Theory of the Firm. 5 hours.

Elementary principles of economics as applied to decision making in agricultural production and distribution, prices, interest and credit, demand and supply, and comparative advantage.

301. Farm Organization and Management. 5 hours.

Prerequisite: AEC 300 or permission of department.

A scientific approach to the study of individual farm programs for the purpose of determining methods to be used for increasing farm income.

302. Economics of Agriculture: Aggregate Analysis. 5 hours.

Prerequisite: AEC 300 or permission of department.

A study of the determination of national income, aggregate employment, the price level and of fluctuations in, and growth of, total output with emphasis on agricultural adjustments in a changing economy.

304. Economics of Agricultural Marketing. 5 hours.

Prerequisite: AEC 300 or permission of department.

A general course in marketing farm products describing and analyzing marketing functions to have a comprehensive understanding of the principles of agriculture marketing.

305. Law and Agriculture. 5 hours.

Prerequisite: Permission of department.

A survey of legal principles and practices as they apply to agriculture, directed toward making the student aware of the rights and obligations encountered in agriculture-related business and farm operations, the ultimate goal of which is to enable the student to recognize and avoid legal problems and to effectively utilize legal counsel.

340. Introduction to Agricultural Policy. 5 hours.

Prerequisite: AEC 300 or permission of department.

An analysis of agricultural policy as formulated by federal and state governments including the objectives, procedures and effects of adopted and proposed agricultural programs.

351. Agricultural Credit. 5 hours.

Prerequisite: AEC 300 or permission of department.

An application of the techniques and principles of finance of the farm firm and a study of needs, sources and problems associated with credit and capital use among individual farm business units.

364. Land Economics. 5 hours.

Prerequisite: AEC 300 or permission of department.

An appraisal of the agricultural use of land in the United States. Designed to meet current needs for training in application of economics to use of land by farmers under changing political and social conditions.

391. Agribusiness Internship. 5 hours.

Prerequisite: Junior standing and permission of department.

This course provides educational experience in the economics of management of a farm or agribusiness firm.

393. Public Regulatory Institutions in Food and Agriculture. 5 hours.

Prerequisite: Junior standing or permission of department.

An evaluation of the role of government in a progressive and affluent society with emphasis on the environmental and regulatory policies imposed on the food and agricultural sector.

400. Cooperative Business Organizations. 5 hours.

Prerequisite: AEC 300 or permission of department.

Economic nature of a cooperative; advantages of pooling business volume; appraising cooperative performance; cooperative, economic and business management principles.

401. Rural Organizations. 5 hours.

Prerequisite: AEC 300 or permission of department.

History of agricultural organizations; study of selected rural agencies and organizations; and a study of the relationship between organizations of rural people and their economic well-being.

402. Advanced Farm Organization and Management. 5 hours.

Prerequisite: AEC 300 or permission of department.

Analysis of economic facts of individual farm plans and formation of economic models which postulate optimum allocation of land, labor, and capital as guides for maximum revenue.

403. Marketing Livestock and Livestock Products. 5 hours.

Prerequisite: AEC 300 or permission of department.

An economic study of livestock marketing with emphasis on functions of marketing, prices, regulations, and the institutions that implement the marketing of livestock.

408. Economics of Agricultural Labor Utilization. 5 hours.

Prerequisite: AEC 300 or permission of department.

Concepts, principles and techniques for improving the economic efficiency of work performance in agricultural firms, with emphasis on labor requirements and crew balance; work methods and equipment selection; layout and materials handling; employee selec-

tion, training and motivation; and budgetary analysis of alternatives.

421. Production Economics: Theory with Applications. 5 hours.

Prerequisite: AEC 300 or permission of department.

The application of fundamental economic principles in determining efficient adjustments in agricultural resource use consistent with economic growth, and changing technology and economic conditions.

451. Farm Appraisal. 5 hours.

Prerequisite: AEC 300 or permission of department.

An application of the methods of appraisal to farm property. A study of the factors influencing farm land and building values, relationship of land use, soils, crops, livestock, buildings, and other factors to farm value.

458. Intermediate Economic Principles. 5 hours.

Prerequisite: AEC 300 or permission of department.

The principles of competitive and imperfect markets in the allocation of consumer goods and input factors in the free enterprise economy.

460. Economics of Rural Environmental Quality. 5 hours.

Prerequisite: AEC 300 or permission of department.

An appraisal of efficiency and equity impacts of rural environmental problem solutions in existing social, economic and political structures. An analysis of general concepts and techniques for the evaluation of alternative pollution abatement policies in relation to changing social, economic and political structures.

461. Quantitative Techniques in Agricultural Economics. 5 hours.

Prerequisite: AEC 300 or permission of department.

The application of basic quantitative techniques to agricultural economic theory, emphasizing basic models used in the study of prices, marketing, and production.

467. Agricultural Prices. 5 hours.

Prerequisite: AEC 300 or permission of department.

The integrated use of price theory and statistical techniques to analyze the behavior of prices, with special emphasis on the prices of agricultural commodities.

469. Agricultural Finance. 5 hours.

Prerequisite: AEC 300 and ACC 110 or 116, or permission of department.

A study of financial problems of agricultural businesses, including budgetary analysis of financial requirements; financial statements; sources, costs and management of funds; risk reduction.

471. Rural Economic Development and Growth. 5 hours.

Prerequisite: AEC 300 or permission of department.

The relationship of inputs and outputs between agriculture and agricultural businesses; analysis of factors affecting development and economic growth in developing areas.

480. Water Resource Economics. 5 hours.

Prerequisite: AEC 300 or equivalent.

A study of the economic aspects of the use, supply, development and management of water resources with special emphasis on river basin and project planning, benefit-cost analyses, water demands, and multiple use management of water resources.

487. (FIN) Commodity Markets. 5 hours.

Prerequisite: Permission of department.

Development, functions, and importance of commodity markets, principles and mechanics of trading commodities on future markets. Includes study of speculation, hedging, and roles of commission houses, commodity exchanges, and clearinghouses. Analysis of technical and fundamental trading theories and use of future contracts as instruments for financing business activities.

502. Management in Agriculture. 5 hours.

Prerequisite: AEC 300 or permission of department.

The study of relevant economic principles; identification and measurements for decision criteria; analysis of managerial alternatives in agricultural firms and their aggregate effects on resource allocation and income.

AGRICULTURAL EDUCATION (EAG)

See Agricultural Education courses under the College of Education.

AGRICULTURAL ENGINEERING (AEN)

109. Engineering Graphics. 5 hours. Five 2-hour lab periods.

Use of drawing instruments, lettering, orthographic and pictorial drawing, concepts of descriptive geometry, and working drawings.

120. Engineering Materials and Manufacturing Processes. 2 hours. Two 2-hour lab periods.

Prerequisite: AEN 109.

Structure and characteristics of metals, woods, and plastics as engineering materials; process principles and practices for manufacturing products made of these materials.

121. Engineering Measurements. 3 hours.

Three 2-hour lab periods.

A study and evaluation of methods, instruments and computations related to leveling, taping, direction determination, curve layouts and land surveying.

190. Freshman Seminar. 1 hour.

Agricultural engineering survey and orientation.

300ABCDEF. Cooperative Work Experience. 1 hour each.

Prerequisite: 100 hours credit and assignment to the Co-op program in industries and agencies.

Coordinated and planned work experience with cooperating industries or agencies.

325. Soil and Water Engineering. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: AEN 356.

Engineering analysis and design of soil, water and plant systems for erosion and flood control, drainage, and irrigation.

342. Computer Applications in Engineering. 3 hours.

Prerequisite: MAT 255.

Applications of digital computer programming to engineering problems.

350. Statics of Engineering. 5 hours.

Prerequisite: MAT 254 and PCS 127-127L.

Force systems, resultants, equilibrium, friction, centroids, and moments of inertia.

351. Dynamics of Engineering. 5 hours.

Prerequisite: AEN 350 and MAT 255.

A study of the motion of rigid particles and bodies under the action of balanced and unbalanced force systems. Includes force, mass, and acceleration, work and energy, and impulse and momentum methods.

355. Strength of Materials. 5 hours.

Prerequisite: AEN 350.

Elements of stress analysis, resistance, and design as applied to engineering materials and structures.

355A. Strength of Materials Laboratory. 1 hour. One 2-hour lab period.

Prerequisite or corequisite: AEN 355.

Development and application of experimental techniques to determine the parameters necessary for an understanding of the elastic and plastic behavior of engineering materials.

356. Fluid Mechanics. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: AEN 351.

Elements and engineering applications of the laws of fluid behavior; statics, kinematics, and kinetics of fluids.

361. Management of Plant Environment. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: AEN 351.

The managing of plant environments including soil, moisture, heat, air. The plant and machine interactions having effects on planting, tillage and harvesting of crops.

362. Energy Conversion. 3 hours. Two lectures and one 2-hour lab period.

Prerequisite: AEN 373.

Principles of conversion and transmission of energy. Conversion from chemical to mechanical to electrical and transfer by mechanical, electrical, and hydraulic means.

366-366L. Machine Hydraulics. 5 hours.

Prerequisite: PCS 127-127L and 128-128L.

The principles of operation and selection of hydraulic system components. The design of hydraulic systems and analysis of the systems. Illustrative applications will be slanted toward agricultural machinery.

370. Waste Management Principles and Practice. 5 hours.

Prerequisite: AEN 374.

The properties and characteristics of wastes are discussed with emphasis on agricultural wastes. Engineering parameters are treated that quantify the various aspects of waste management. Physical and biological treatment processes and systems are described with opportunity given for engineering design.

371. Agricultural Structure Design. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: AEN 355 and 355A.

Environmental, space, and structural design of farm structures; cost estimates and specifications.

373. Thermodynamics. 3 hours.

Prerequisite: MAT 255 and PCS 128-128L.

The first and second Laws of Thermodynamics and their engineering applications.

Ideal gas law, non-flow and steady flow processes, power and reversed cycles, two-phase systems and the psychrometric chart.

374. Heat Transfer. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: MAT 401.

The theory of heat transmission by conduction, convection, and radiation in the steady and unsteady states. The solution of engineering problems involving heat transfer.

381. Processing. 3 hours. Three lectures.

Prerequisite: AEN 374.

Methods of processing agricultural products, including sizing, cleaning, sorting and drying. Fundamentals of materials handling with emphasis on process analysis and plant design.

382. Management of Structural Environments for Agricultural Production. 3 hours. Two lectures and one 2-hour lab period.

Prerequisite: AEN 374.

Animal bioenergetics, environmental factors affecting animal productivity, heat and vapor flow in buildings, design of ventilation systems, heating and cooling loads for buildings.

383. Electric Circuits. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: MAT 255 and PCS 128-128L.

An introductory course including definitions of electric circuits parameters, Kirchoff's and Thevenin's Laws, circuits analysis, complex notations, mesh and nodal analysis resonance and polyphase circuits. Magnetic circuits and equivalent circuits will be emphasized.

384. Introduction to Microprocessor Systems. 3 hours.

Prerequisite: Junior/Senior status in BSAE Program or permission of department.

Student will be introduced to microprocessor based systems. Microprocessor architecture, number systems, and minimal assembly language programming will be covered. Potential for utilization in control system development is presented.

385. Electrical Machines. 3 hours. Two lectures and one 2-hour lab period.

Prerequisite: AEN 383.

A laboratory analysis of the operating characteristics of transformers, alternators, polyphase motors, single phase motors and DC generators and motors.

387. Engineering Electronics. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: AEN 383.

Electronic devices, including transistors, with

particular emphasis on the design of circuits for small signal amplifiers, relays, electronic timers, photo-electric devices and solid state electronics.

392. Senior Seminar. 0 hours.

Engineering seminar required of engineering students.

395. Engineering Economics. 2 hours.

Prerequisite: Junior standing in engineering.

Engineering decisions based on the economics involved. Engineering decisions governing retention or retirement of machines, buildings, and processes are made using engineering situations as the vehicle. Engineering concepts are used in the decision making.

441. Electrical Systems and Controls. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: AEN 383.

The design of electrical systems for agricultural production and processing applications which involve electrical energy for light, heat, power, control, radiation and measurement with special emphasis on the design and utilization of control systems.

443. Mechanical Harvesting Systems. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: AEN 362 and 371.

Case studies of design of existing machinery. Design and selection of machine components and harvesting systems. Application of principles of mechanics and physical properties of materials to mechanical system design.

444. Water Management Systems. 5 hours.

Prerequisite: AEN 325.

An engineering design course utilizing the principles of hydrology, hydraulics, soil mechanics, erosion control, and economics in designing a multiple-use water management system for a rural and/or urban watershed.

445. Countryside Engineering. 5 hours.

Prerequisite: Senior status in agricultural engineering.

The relationship of governmental regulations and regulating agencies to the engineering aspects of land development. The engineering design of land areas, including roadway layout, lot layout, drainage, lighting, water systems, waste systems, and solid waste disposal.

448. Instrumentation for Environmental Quality. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Senior standing in agricultural engineering.

A study of the basic principles of operation of instrumentation used to measure physical variables which determine environmental quality. The engineering design and application of measuring systems for airborne particulates, gaseous contaminants, odor and noise will be emphasized.

449. Design of Alternate Energy Systems. 5 hours.

Prerequisite: AEN 356, 374, 383 and senior standing in engineering.

The application of basic engineering sciences to the design of alternate energy systems. Particular emphasis is placed upon solar energy system design and also upon wind, biomass combustion, and low head hydro-electric energy systems. Energy storage and delivery systems will also be considered.

480. Microprocessor Based Control Systems. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: AEN 384 and senior status in engineering program.

The necessary background to enable students to design and develop microprocessor based control systems is covered. Coverage of system architecture input/output problems and programming will equip student for system design.

Courses in Engineering Technology for Non-Engineering Students (ET)

303. Wood and Masonry Technology. 5 hours. Five 2-hour lab periods.

Development of basic understanding and skill in wood and masonry work; selection, care and use of materials, hand tools, and power equipment; plans, sketches and drawings; woodworking and carpentry; concrete and masonry; painting and wood finishing.

307. Metal Technology. 5 hours. Five 2-hour lab periods.

Development of basic understanding and skill in metal work; selection, care, and use of materials, hand tools, and power equipment; cold and hot metal work; gas and arc welding; plumbing; soldering; surface finishing, and service centers.

310. Surveying. 5 hours. Five 2-hour lab periods.

Prerequisite: MAT 109.

Surveying methods, instruments, and computations related to field problems in taping, leveling, directions, curves, and land surveying.

328. Soil and Water Technology. 5 hours.

Prerequisite: AMT 321 or permission of department.

Planning and management of irrigation and erosion control systems. Includes use of the differential level for surveying.

360. Farm Power Machinery. 3 hours. Three lectures.

The operation, care, repair, and selection of farm machinery and tractors for use on farms.

365. Farm Buildings and Equipment. 3 hours. Three lectures.

A study of farm buildings, equipment, and facilities with emphasis on space, material, sanitary, managerial, and cost requirements.

380. Farm Electrification. 3 hours. Three lectures.

Applications of electricity to agriculture; wiring systems for farm buildings; selecting, using, and controlling electrically operated equipment in farming operations.

AGRICULTURAL MECHANIZATION TECHNOLOGY (AMT)

200. Applied Graphics and Plan Interpretation. 5 hours. Five 2-hour lab periods.

Principles and practices in lettering, multi-view projections and dimensions, working drawings and layouts; interpretation of specialized plans, schematic diagrams and conventional representations, maps, charts, and graphs.

201. Construction Materials and Tool Processes. 5 hours. Three lectures and two 2-hour lab periods.

A study of the fundamentals and uses of metals, woods, concretes, concrete products, and plastics as materials of construction; tools and manufacturing processes for changing sizes, forms, and surfaces; organization and management of tool and machines.

321. Hydraulics in Agriculture. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Junior standing.

Transmission, storage and utilization of energy by means of fluid machines; fundamentals and operations of hydraulic systems used in farm power units and machines, motors, and drives, environmental control equipment, and fans and sprayers.

331. Structures and Environment. 5 hours.

Three lectures and two 2-hour lab periods.

Bioenergetics of animal response to thermal

environments, psychrometrics, heat and moisture balances in buildings, selection of ventilation systems components, waste management systems, farmstead layout, loads on buildings, functional planning selection of materials, and operation of modern structures.

341. Handling and Processing Agricultural Products. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Junior standing.

Fundamentals and operation for handling agricultural materials in bulk and packaged forms; processing principles and procedures; selection of equipment; development of systems, determination of cost.

342. Utilization of Electric Power and Equipment. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Junior standing.

Fundamentals and utilization of electric power through appropriate units of equipment and systems for heating, cooling, working, and controls; energy transmission and measurements; equipment selection, operation, maintenance, and evaluation for given tasks.

351. Production and Harvesting Technology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: AMT 321.

A study of the design and operational technology of modern machinery, power units and tractors used in the production and harvesting of major field crops; equipment selection for systems farming; economic and technical management for efficient machine performance, control, and safety.

AGRICULTURAL EXTENSION (AET)

313. Agricultural Extension Organization and Procedures. 5 hours.

Prerequisite: Two or more senior division courses.

Philosophy, procedures, and practices of Cooperative Extension Service work in agriculture and home economics; organization, administration, and financing; relationships with cooperating and related organizations and agencies; qualifications, duties, and responsibilities of Cooperative Extension Service personnel.

314. Agricultural Extension Service Programs. 5 hours.

Prerequisite: AET 313.

Scope and nature of Cooperative Extension Service programs at national, state, and county levels; emphasis upon techniques, policies, and procedures for developing Cooperative Extension Service programs as basis for work of county extension agents; activities involved in carrying out programs; evaluation of efforts and results obtained.

391. Internship in Cooperative Extension. 5 hours.

Prerequisite: Permission of department.

This course provides practical experience in Cooperative Extension Service operations while engaged as a 4-H camp counselor, as a student aide, or otherwise in a Cooperative Extension Service program effort.

504. Creative Programming for 4-H and Youth. 5 hours.

Prerequisite: AET 313 or equivalent.

History, philosophy and organizational structure of Cooperative Extension 4-H and youth education; emphasis upon the needs of youth, teaching, program planning and evaluation methods, the management of human, program and financial resources necessary for 4-H youth work.

505. Communications in Cooperative Extension. 5 hours.

The use of communications media in Cooperative Extension work, with special emphasis on mass communications.

507. Program Building in Extension. 5 hours.

Prerequisite: One year of experience in extension or closely related work.

A study of the basic problems, principles and procedures involved in program development in Cooperative Extension Work.

508. Agricultural Extension Administration. 5 hours.

Prerequisite: One year of experience in extension or closely related work.

A seminar in the organization, administration, operation, and evaluation of the Cooperative Extension service and its educational programs.

AGRICULTURAL JOURNALISM

See journalism courses under School of Journalism and agricultural courses under College of Agriculture.

AGRONOMY (AGY)

201-201L. Crop Science. 5 hours.

Prerequisite: BOT 121-121L or BIO 101-101L.

A fundamental course in crop science, including the major agricultural areas of the United States and emphasizing the crops of the Southeast. A study of the principles of production of agricultural plants, including classification, morphology, reproduction, growth, and improvement.

305-305L. Principles of Soils. 5 hours.

Prerequisite: Two courses in freshman chemistry.

Soil formation, physical, chemical, and biological properties of soils, commercial fertilizers, lime and organic matter; and soil management practices.

321. Forage and Pasture Crops. 5 hours.

Prerequisite: AGY 201-201L and 305-305L.

The characteristics, origin, variation, adaptation, and culture of the important grasses and legumes. (Fall and Winter quarters.)

334-334L. Cereal Crops. 5 hours.

Prerequisite: AGY 201-201L and 305-305L.

Characteristics, cultural practices, harvesting, processing, marketing, utilization and improvement of cereal crops. (Spring quarter.)

335. Oil, Fiber, Sugar and Aromatic Crops. 5 hours.

Prerequisite: AGY 201-201L and 305-305L.

Description of the principles and practices involved in the production and utilization of oil, fiber, sugar, and aromatic crops. (Winter quarter.)

369. Management of Turf I. 5 hours.

Prerequisite: One course in biology and permission of department.

A study of turf grasses and growth requirements. The various operations, equipment, materials, and work program for the proper and efficient maintenance and management of turf for golf courses and other specific uses. (Spring quarter.)

391. Agronomy Internship. 1-5 hours.

Prerequisite: Three senior division courses and permission of department.

This course is designed to give interested and well-prepared students needed experiences in agronomic production, agribusiness, research, instruction and service organizations.

399. Special Problems in Agronomy. 1-5 hours.

Prerequisite: Ten hours in agronomy courses 300 or higher and permission of department. Research on agronomic problems conducted

in laboratory, field or library; report required, directed by agronomy staff.

404-404L. Plant Breeding. 5 hours. Four lectures and one lab period.

Prerequisite: GEN 358.

Fundamental methods utilized in the science of plant breeding and the important role that breeding plays in crop and tree improvement. (Spring quarter.)

411-411L. Advanced Plant Genetics. 5 hours.

Four lectures and one lab period.

Prerequisite: GEN 358.

Recent developments in genetics, significant events, recombinant DNA, somatic hybridization, tissue culture, modification of basic ratios, planning experiments, genetic procedures, male sterility, genetics of disease and insect resistance, statistical tests, linkage, quantitative and cytoplasmic inheritance, heritability, polyploidy, mutations, apomixis, use of trisomics and translocations, and classic papers. (Winter quarter.)

425. Pasture Development and Management. 5 hours.

Prerequisite: AGY 321 and one other senior division course.

Fundamental principles and theories of establishment and growth; production and utilization of pasture plants; types of pastures; principles of biological adaptation and management for production and conservation. (Winter quarter.)

427. Agronomy Seminar. 1 hour, repeatable for maximum 3 hours credit.

Prerequisite: Junior or senior in College of Agriculture. Two senior division courses in agronomy or allied field.

Seminar in topics related to farm crops and soils. Participation required for credit. Faculty participation encouraged. (Fall, Winter, and Spring quarters)

434-434L. Principles of Chemical Weed Control. 5 hours.

Prerequisite: BOT 380-380L or equivalent, and CHM 261 and 261L.

A study of weeds and weed control methods in agronomic crops with emphasis on chemical weed control. Herbicides will be discussed with regard to chemical structure, selectivity, mode of action, and dissipation. (Fall and Winter quarters)

454-454L. Soil Morphology and Classification. 5 hours.

Prerequisite: AGY 305-305L and one other senior division course in geology, agronomy, chemistry, or forestry approved by department.

Morphological characteristics of soils, factors influencing these characteristics and classification of soils of the U.S. Several full-day field trips will be required at the student's expense (total cost about \$35). (Fall and Spring quarters.)

458. Soil Conservation. 5 hours.

Prerequisite: AGY 201-201L and 305-305L or equivalent.

A study of soil as a resource, water use and conservation, the soil erosion process, control of erosion and the relationship of soil conservation to conservation of other resources. (Fall quarter.)

459-459L. Soil Fertility. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: AGY 305-305L.

Soil conditions affecting availability of plant nutrients; methods of determining soil fertility and insufficiency of plant nutrients in soils, and interpretation of chemical and biological measurements as related to fertility maintenance and good soil management. (Winter and Spring quarters.)

460. Soil Physics. 5 hours.

Prerequisite: AGY 305-305L and one course in physics.

Physical properties, moisture relations, and methods of physical analysis of soils. (Winter quarter.)

461-461L. (MIB) Soil Microbiology. 5 hours.

Prerequisite: MIB 350-350L or equivalent.

A survey of the microorganisms occurring in soil, carbon, nitrogen and mineral cycles, and the effect of microorganisms on soil properties. (Spring quarter.)

462. Wastes and the Soil. 3 hours.

Prerequisite: AGY 305-305L.

A study of the adsorption, transformation and movement of organic and inorganic wastes in soils and some problems in waste disposal. (Winter quarter)

464. Land Use and Soil Management. 5 hours.

Prerequisite: AGY 305-305L or equivalent.

Physical and chemical properties of soils affecting agricultural and urban land uses; emphasis on the effect of various agronomic management systems on soil productivity and environmental degradation; discussion of current issues, including prime farmland, multiple use, tillage systems, conventional and organic fertilizers, and the conservation ethic. (Spring quarter)

466. Soil and Plant Analysis. 3 hours.

Prerequisite: AGY 459-459L.

Current techniques and methods of interpreta-

tion of soil testing and plant analysis. (Fall quarter.)

466L. (HOR) Methods for Soil Testing and Plant Analysis. 2 hours.

See HOR 466L.

467-467L. Soil Chemistry. 5 hours.

Prerequisite: AGY 305-305L and CHM 280 and 280L.

The field of soil chemistry applies and extends the concepts of chemistry and physics in the investigation of problems related to soil physical, chemical and biological characteristics of importance in the management of natural resources. (Winter quarter)

ANIMAL NUTRITION (AN)

436. Ruminant Nutrition. 5 hours.

Prerequisite: AS(DS) 330, VPH 310, CHM 240 and 240L, and BCH(BIO) 310.

An in-depth study of digestive physiology and metabolism of the rumen. Treats systematically the diversity of function, complex symbiotic relationships of the rumen microflora-microfauna, and the physiology and metabolism of the rumen as related to digestion, absorption and utilization of nutrients. Provides a framework in which practical applications can be evaluated.

ANIMAL SCIENCE (AS)

201-201L. Introductory Animal Science. 5 hours.

Prerequisite: Must be first course in animal science or have permission of department.

A study of basic principles of breeding, feeding and management of beef cattle, dairy cattle, sheep, swine and horses.

310. Introduction to Genetics of Livestock Improvement. 5 hours.

Prerequisite: GEN 358.

A study of the basic principles of genetics and statistics as related to the genetic improvement of farm animals.

320. Types, Classes, Grades and Evaluation of Livestock. 3 hours.

Evaluation of livestock for carcass composition and selection for the breeding herd.

321. Livestock Evaluation and Selection. 3 hours.

Prerequisite: AS 320 or permission of department.

A course which deals with the selection of livestock for the breeding herd and for slaughter. From the students in this course will

be chosen the team to represent the University in the annual Spring Intercollegiate Livestock Judging Contests.

322. Advanced Livestock Evaluation and Selection. 3 hours.

Prerequisite: AS 321 or permission of department.

A continuation of AS 321. From the students in this course will be chosen the team to represent the University in the annual Fall Intercollegiate Livestock Judging Contests.

330. (DS) Fundamentals of Animal Nutrition. 5 hours.

Prerequisite: CHM 261 and 261L or permission of department.

A study of the fundamental principles of animal nutrition.

331. Feeds and Feeding. 5 hours.

Prerequisite: AS(DS) 330 or permission of department.

A study of the composition and properties of the important feedstuffs and the application of the basic principles of nutrition in the use of these feedstuffs in the scientific feeding of farm livestock.

332. Animal Nutrition and Feeding. 5 hours.

Student with credit for AS 332 will not receive credit for AS(DS) 330 or AS 331.

A study of the fundamentals of animal nutrition followed by feed identification and ration formulation. This course is designed for non-animal science majors; however, it is not intended to meet the nutrition course requirement for preveterinary medicine.

340. Physiology of Reproduction in Farm Animals. 5 hours.

Prerequisite: VPH 310 and at least one other senior division course in animal science or closely related field.

A study of the physiology of reproduction in farm animals.

360-360L. Beef Cattle Production and Management. 5 hours.

Prerequisite: AS 331 or permission of department.

A study of the breeding, feeding, and management of beef cattle.

361-361L. Swine Production and Management. 5 hours.

Prerequisite: AS 331 or permission of department.

A study of the breeding, feeding, and management of swine.

363. Horse Production and Management. 5 hours.

Prerequisite: AS 331 or permission of department.

A study of the breeding, feeding and management of horses.

364-364L. Sheep Production and Management. 3 hours.

Prerequisite: AS 310 and 331 and 340 or permission of department.

A study of the breeding, feeding, and management of sheep.

370AB. Special Problems in Animal Science. 2-5 hours each.

Prerequisite: Permission of department.

For the advanced outstanding undergraduate student who wishes to gain technical experience and/or prepare for a research career. Research on animal science problems conducted in the library, laboratory, or on the experimental farms. Written report to be required. To be directed by members of the animal science staff.

381, 382. Animal Science Seminar. 1 hour each.

Topical discussion of current problems and scientific work in the various fields of animal science.

391ABC. Internship in Animal Science. 5 hours each.

Prerequisite: Permission of department.

410. Advanced Genetics of Livestock Improvement. 5 hours.

Prerequisite: GEN 358, STA 200 or 421, AS 310 or permission of department.

The development of practical and genetically sound programs involving the study and application of genetic principles underlying selection, systems of mating and performance testing. Major emphasis will be on characters of economic importance in meat animals.

420. Livestock Merchandising. 3 hours.

Prerequisite: AS 360-360L or 361-361L or DS 362.

A study of the principles and activities involved in successfully promoting and merchandising livestock. Course will feature presentations by industry leaders in the field of livestock merchandising. A livestock auction will be held at the conclusion of the course to allow for application of acquired knowledge.

441-441L. Applied Animal Reproductive Management. 5 hours.

Prerequisite: AS 310 and 331 and 340 and any one production course.

This course deals with management of reproduction in farm animals for efficient livestock production. Application of reproductive management principles associated with artificial insemination, embryo transfer, pregnancy detection, semen collection and reproductive record management will be covered.

460. Advanced Beef Production and Management. 5 hours.

Prerequisite: AS 310, 331, 340 and 360.

Concepts, principles and techniques in modern beef production with emphasis in breeding, reproduction, nutrition, forage management, herd health and herd management.

461. Advanced Swine Production and Management. 5 hours.

Prerequisite: AS 310, 331, 340 and 361.

Concepts, principles and techniques in modern swine production with in-depth emphasis in breeding, nutrition, physiology, housing, herd health and management.

BOTANY (BOT)

See Botany listings under the College of Arts and Sciences.

DAIRY SCIENCE (DS)

102. Introductory Dairy Science. 3 hours.

Prerequisite: Must be first course in dairy science or have permission of department.

An elementary course in dairying, dealing with the following general subjects: relation of dairying to agriculture; care and handling of milk on the farm; milk secretion; feeding, breeding, judging, and selection of dairy cattle.

300-300L. Fundamentals of Milk Processing and Production. 5 hours.

Prerequisite: CHM 111 and 111L and 112 and 112L and BIO 102-102L.

a basic study of the principles of dairy science and technology as applied to the efficient and sanitary production of milk and the processing of milk into high quality products.

310. Dairy Cattle Breeding. 5 hours.

Prerequisite: GEN 358 or permission of department.

A study of factors involved in improving the genotype and phenotype of dairy cattle. Mating systems and techniques, production testing, type classification, sire proofs and pedigrees. Application of genetics, anatomy, endocrinology, and physiology to improvement of dairy cattle.

324. Dairy Products Judging and Grading. 3 hours.

Prerequisite: Permission of department.

Scoring and grading of milk, butter, ice cream, cheese, and cottage cheese.

326. Dairy Cattle Evaluation and Selection. 3 hours.

A study of the principles and practices concerned with the evaluation of type in dairy cattle, with special emphasis on show ring judging.

327. Advanced Dairy Cattle Evaluation and Selection I. 2 hours.

Prerequisite: DS 326 or permission of department.

A continuation of DS 326. The University will be represented at national intercollegiate judging contests in the Fall by students chosen from this course.

328. Advanced Dairy Cattle Evaluation and Selection II. 1 hour.

Prerequisite: DS 327 or permission of department.

A continuation of DS 326 and 327. The University will be represented at national intercollegiate judging contests in the Fall by students chosen from this course.

330. (AS) Fundamentals of Animal Nutrition. 5 hours.

See AS 330.

352. Dairy Chemistry. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: DS 300-300L.

A basic study of the chemical and physical properties of milk; analysis of milk and milk products according to standard methods; functions and operation of a dairy control laboratory.

353. Market Milk and Related Products. 5 hours.

Prerequisite: DS 300-300L or permission of department.

The sanitary and legal requirements for producing, handling and processing milk and related products; approved production methods; quality tests; processing operations; plant sanitation and efficiency.

354. Dairy Plant Management. 5 hours.

Prerequisite: DS 300-300L or permission of department.

Fundamental principles of business and factory management practices as used in the dairy industry. Problems of personnel management, production methods, quality control, merchandising, dairy plant design and

construction, records and business methods involved in dairy plant operations.

355. Ice Cream Making. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: DS 300-300L or permission of department.

Basic principles of ice cream mix composition, standardization, flavoring, stabilization, processing, freezing, merchandising, and storage of ice cream, sherbets, ices, and soft-serve dairy products.

357. (MIB) Dairy Microbiology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: DS 300-300L or permission of department.

Determination of numbers and types of bacteria; use of microorganisms in the manufacture of dairy products; study of milk fermentations and disease-producing organisms applicable to milk.

362. Dairy Cattle Production and Management. 5 hours.

Prerequisite: AS 331 or permission of department.

A study of the effects of environment and its interactions with physiology and inheritance upon performance of the cow and the cost of producing milk. This includes the effects of climate, health, sanitation, forage systems, housing, equipment and waste management.

370AB. Special Problems in Dairy Science. 2-5 hours each.

Prerequisite: Permission of department.

A planned and coordinated work-study experience with cooperating dairy enterprises. Designed to give the student a programmed exposure to the best in control, production, and/or processing operations conducted by those most expert in their fields, with supervision by the faculty.

381, 382. Dairy Seminar. 1 hour each.

Topical discussion of current problems and scientific work in dairying.

391ABC. Internship in Dairy Science. 5 hours each.

Prerequisite: Permission of department.

A learning experience in the actual operation of dairy manufacturing plants or dairy herds with regard to large scale product processing techniques, dairy herd management and related areas, quality control procedures and managerial decision-making.

442-442L. Milk Secretion. 3 hours.

Prerequisite: VPH 310 or equivalent.

The application of certain fundamentals of anatomy, biochemistry, and physiology to study of milk secretion. The relationship of various farm practices to maximum milk yields will be discussed from the fundamental standpoint. One practical laboratory experience will be included per week. Discussions and demonstrations will be across several species.

452-452L. (MIB) Microbiology for Sanitarians. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MIB 350-350L or DS(MIB) 357.

Study of microorganisms in fluid milk and milk products, their relation to spoilage and epidemiology. Inspection and enforcement procedures.

453-453L. (MIB) Microbiology of Fermented Dairy Foods. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MIB 350-350L or DS(MIB) 357.

Study of microorganisms utilized in manufacture of cheese, cultured milks, sour cream, and other dairy products. Defects caused by microorganisms and bacteriophages. Flavor development.

463. Advanced Dairy Cattle Feeding and Management. 5 hours.

Prerequisite: DS 362, DS(AS) 330, and AS 331 or permission of department.

The application of fundamental knowledge of nutrition, physiology, environment, and economics in the feeding and management of the dairy herd.

ENTOMOLOGY (ENT)

See Entomology listings under the College of Arts and Sciences.

ENVIRONMENTAL HEALTH SCIENCE (EHS)

306. Introduction to Environmental Health Science. 5 hours.

Prerequisite: Permission of department.

A broad study of the fundamentals of environmental health, covering environmental control agencies, elements of the environment suffering from pollution, environmental pollutants and their sources, effects of environmental pollution, methods of pollution control, and a general assessment of the costs of environmental pollution.

325. Environmental Health Program Planning. 3 hours.

The administration, management, planning, implementation, and evaluation of environmental health programs. Discussion of roles of systems, decision making, designing, resource allocations, and priorities in the environmental health program planning process.

370AB. Special Problems in Environmental Health Science. 1-5 hours each suffix, repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Course designed to give the undergraduate student the opportunity to carry out research or intensive study in a specialized area of environmental health under the direction of a staff member.

380AB. Environmental Health Seminar. 1 hour each.

391ABC. Internship in Environmental Health Science. 5 hours each.

Prerequisite: Permission of department.

409. Industrial Hygiene. 5 hours.

Prerequisite: CHM 240 and 240L.

The recognition, measurement, evaluation, and control of those environmental factors, arising in or from the workplace, which can cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers or among citizens in the community.

449. Environmental Toxicology. 5 hours.

Prerequisite: CHM 240, 240L, and permission of department.

A study of the extent and significance of toxic agents in man's environment, and the physical, chemical, and biological processes which determine their behavior, fate, and ultimate effect on human health.

459-459L. (MIB) Microbiology of Water and Wastewater. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CHM 261 and 261L and MIB 350-350L.

In-depth study of microbial life of water and wastewater, domestic and industrial, with scrutiny of current treatment processes. Sampling methods will be demonstrated along with proper storage of samples. Study will be made on effects of different types of waste on microbial population of rivers and streams.

FOOD SCIENCE (FS)

301. Man and His Food. 5 hours. Three lectures and a lab period.

Historical and philosophical aspects of food processing and its relationship to public health, nutritive value, quality of the finished product, and governmental regulations. Consideration of basic facts, principles and terminology pertaining to most foods and food processes.

315. Food Science Seminar. 1 hour.

Prerequisite: Permission of department.

A discussion course, required of all students majoring in the department.

319. Special Problems in Food Science. 1-5 hours.

Prerequisite: Permission of department.

This course is available to upper division students to pursue undergraduate research problems in food science.

365-365L. Meat and Animal Evaluation. 5 hours. Two lectures and two 3-hour lab periods.

An introduction to meat science; relation of the live animal to its ultimate value as a food product; efficient marketing of live animals, technological and manipulative skills in slaughtering and processing; anatomy, muscle structure and function as indicators of meat quality.

367. Food Industries Survey. 5 hours. Five lectures or field trips.

The study of the sources of raw materials, the processing, storage, and handling of processed foods, and the problems involved in the processing of these products.

368-368L. Meat Processing. 5 hours. Two lectures and two 3-hour lab periods.

Prerequisite: MIB 350-350L.

The theory and practices of meat processing, including curing, smoking and manufacture of sausage products.

370. Meats Judging I. 3 hours.

Detailed consideration of factors involved in grading and evaluating beef, pork and lamb carcasses and primal cuts. Terminology to describe carcasses of the same species to detect differences among carcasses of the same species will be stressed.

371. Meats Judging II. 3 hours.

Prerequisite: FS 370.

Students will receive extensive training in evaluating factors involved in selecting and

grading carcasses and wholesale cuts of beef, pork and lamb. Terminology required to describe carcasses of the same species in order to detect differences among carcasses and primal cuts will be stressed. The meats judging team which will represent the University in intercollegiate Meats Judging Contests will be selected from this course.

386. (PS) Poultry Processing. 5 hours.
See PS 386.

391. Food Science Internship. 2-5 hours.
Prerequisite: Basic courses in food science and permission of department.
This course provides a practical educational experience while working in an operational food industry laboratory or plant.

407-407L. (MIB) Microbiology of Foods. 5 hours. Two lectures and three 2-hour lab periods.

Prerequisite: MIB 350-350L.
Microorganisms in natural and processed foods; their origin, nature, and effects on foods; enumeration; relationship to health.

409-409L. Community and Home Food Preservation. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: At least two senior division courses in appropriate departments as determined by the Food Science department.

The principles of food preservation will be studied with reference to present practices and possible improvement in home and community methods. The effect of various methods of food preservation will be evaluated in terms of public health, food spoilage, food quality, and the nutritional value of the foods.

411-411L. Food Engineering Fundamentals. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: FS 301 or 367 or 409-409L or permission of department.

Mass and energy balance, fluid flow, heat transfer and refrigeration in food plant operations. The course will cover the theory, calculations and design practices, and equipment used on these operations, as well as the physical, chemical, and microbial changes that can occur in foods in processes employing these operations.

412-412L. Food Engineering Fundamentals. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: FS 411-411L or permission of department.

Continuation of FS 411-411L. Covers phase equilibria in foods, evaporation de-aeration, drying, filtration, size reduction, mechanical separation processes, agglomeration, and process control.

413. Food Process Development. 5 hours. Three lectures and two 3-hour lab periods.
Prerequisite: FS 411-411L and 412-412L.

The principles of food process design and development, identification of critical parameters in food processing operations, automatic control systems, process optimization, principles of scaling-up from bench to pilot plant to industrial scale, equipment selection and specification, and processing cost estimate.

414-414L. Food Chemistry. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: CHM 240 and 240L or 340 and 340L, FS 301, 367, or 409-409L.

A study of the chemical and physical properties of foods.

419. Nutritional Quality of Food and the Effect of Technology. 5 hours.

Prerequisite: FS 414-414L, BCH(BIO) 310, or permission of department.

A study of the nutritional properties of food and the effects of modern technology on nutritional quality.

421-421L. (MIB) Environmental Microbiology. 5 hours. Two lectures and three 2-hour lab periods.

Prerequisite: MIB 350-350L.

The role of environment on organisms; agents to retard, inhibit, or stimulate bacteria and their mode of action; dynamics of physical, physiological and chemical factors affecting bacteria and their resistance to antimicrobial agents; isolation of anaerobes and factors affecting sporogenesis, dormancy, spore germination and differentiation.

422-422L. Instrumental Methods of Food Analysis. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CHM 240 and 240L.

Spectrophotometric, colorimetric, chromatographic, and potentiometric methods of analysis as applied to food will be studied. Emphasis will be placed upon correlation and interpretation of results.

423-423L. Food Packaging and Quality Control. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MAT 109, MIB 350-350L, FS 301 or 367.

The physical, chemical, microbiological and economic problems related to the use of metal, glass, paper, flexible films, and other packaging materials in the food industry. Objectives of statistical quality control, experimental sampling approach to quality control, types of control charts, acceptance sampling and production control.

424-424L. Advanced Science of Meat, Fish, and Poultry Processing. 5 hours. Three lectures and three 2-hour lab periods.

Prerequisite: FS 407-407L, 411-411L and 414-414L.

Advanced theoretical and applied concepts relating to physical, chemical, enzymatic, and microbial changes occurring in meat, fish and poultry products during processing. These will be studied with particular reference to canning, curing, freezing, refrigeration, spoilage of fresh and processed flesh products, and the use and development of by-products.

425. Governmental Regulation of Food Safety and Quality. 3 hours.

Prerequisite: Permission of department.

Role of mandatory and optional food regulations exercised by state, federal and international agencies on food quality, safety, wholesomeness and nutrition.

426-426L. (FDN) Sensory Principles and Practices. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Permission of department.

The sensory properties of foods, methods for the evaluation of color, flavor, texture, appearance and other qualities, the relations of sensory qualities to chemical or physical attributes, and experimental design and the analysis of data will be studied.

HORTICULTURE (HOR)

300. Horticultural Science. 5 hours.

An introduction to horticultural science, the biology of horticulture, the technology of crop production and marketing, the industry, geography, production systems, esthetics, and crop types.

314-314L. Interior Landscapes. 5 hours.

Prerequisite: HOR 300 and 325.

The growth, installation, care, and use of indoor foliage plants.

315. Horticultural Physiology I. 5 hours.

Prerequisite: BOT 380-380L, CHM 111 and 111L and 112 and 112L or 121 and 121L and 122 and 122L; HOR 300; or permission of department.

A study of certain physiological principles affecting growth and production of horticultural crops. Emphasis is placed on water relations, nutrition, photoperiodism and growth regulators as they affect growth, flowering and fruiting of horticultural crops.

325. Horticultural Physiology II. 5 hours.

Prerequisite: BOT 380-380L; CHM 111 and 111L and 112 and 112L or 121 and 121L and 122 and 122L.

A study of the principles of plant growth as they are applied to the production of horticultural crop plants. Emphasis is placed on temperature, respiration, photosynthesis and pruning practices in growth, flowering, and fruiting.

362. Plant Propagation. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: BIO 101-101L, 102-102L, or BOT 121-121L, 122-122L, and HOR 300.

A study of the principles and practices underlying the increase in plant numbers with emphasis primarily on the anatomical and physiological basis for plant reproduction by various methods.

363ABC. Nursery Management I, II, III. 2 hours each. One lecture and one 2-hour lab period.

Prerequisite: Permission of department.

A study of the basic fundamentals underlying the location, operation, and management of both retail and wholesale nursery establishments.

368. Management of Ornamentals. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: One course in botany and permission of department.

A study of the various operations, equipment, materials, and work programs necessary for the proper and efficient professional maintenance and management of ornamental plantings.

370AB. Ornamental Systematics I, II. 3 hours each. Two lectures and one 2-hour lab period.

Prerequisite: Permission of department.

A laboratory course concerned with the classification, nomenclature, and identification of annuals, perennials, and woody plants grown in nurseries, gardens and other horticultural plantings. Emphasis is placed on identification, characteristics, requirements and usefulness.

391. Horticulture Internship. 5 hours.

Prerequisite: Student must have completed basic courses in major field; permission of department; junior or senior standing.

An educational experience in the operations and management of horticultural industries or laboratories is provided through practical work experience.

400. Horticulture Seminar. 1 hour.

Required of all undergraduate students in horticulture. Open to all students in related fields. Attendance without registering for credit is permitted. Papers on selected topics to be presented by registered students.

402. Advanced Pomology. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 300.

The physiological principles underlying the production of fruit and nut crops and small fruits with review of experimental evidence. Emphasis placed on varietal selections, site selection, and current cultural practices.

404. Advanced Olericulture. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: BOT 423-423L and HOR 300.

Principles and perspectives of vegetable crop production with emphasis placed on current cultural practices and environmental influences.

405. Greenhouse Management I. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 300, 315, and 325.

A study of the principles and practices involved in the production of greenhouse pot plants, bedding plants and a few selected cut flowers. Special emphasis is given to nutrient practices, the effects of growth regulators and postharvest handling and storage practices of floriculture crops.

406. Greenhouse Management II. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 405.

A study of commercial greenhouse crop production practices with special emphasis on pot plant production techniques, plant nutrition, fertilizers, and the use of growth regulators. Students will be personally responsible for the culture of a floriculture crop in the greenhouse.

407, 408. Special Problems in Horticulture. 2-5 hours each.

Prerequisite: 10 hours senior courses in horticulture.

These courses are designed for the student who wishes to carry out a research or technical problem of special interest under direction of a staff member.

409. Landscape Contracting. 5 hours.

Prerequisite: 10 hours of horticulture.

Landscape installation, lawn establishment,

care of the landscape after installation, development of contracts for same.

411. Plant Nutrition. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: BOT 423-423L and 380-380L.

Principles and perspectives of plant nutrition. Emphasis is placed on the "initial" or "acquisitive" aspects of plant nutrition. This course deals in the main with the mineral nutrition of higher green plants. This course is designed to allow a student to deal with problems encountered by plants as they mine the environment through a sound knowledge of the science of plant nutrition.

421. Postharvest Physiology of Horticultural and Agronomic Crops. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: BOT 380-380L.

A study of functional processes in fruits, vegetables, nuts, seeds, cut flowers and intact plants after they have been harvested. These processes include catabolic and anabolic metabolism, anatomical changes and pathological responses. Transportation, refrigeration, controlled atmospheres, drying and packaging principles are also covered.

430. Plant Protection Laboratory. 2 hours. Two 2-hour lab periods.

Prerequisite: PAT 353-353L and ENT 374-374L.

The application of pesticides for the control of insects, diseases, weeds, and other crop pests. Special attention is given to application equipment and principles.

466L. (AGY) Methods for Soil Testing and Plant Analysis. 2 hours.

Prerequisite: CHM 112 and 112L or 122 and 122L.

Corequisite: AGY 466.

Laboratory exercises in the collection, preparation and elemental assay of soils and plant tissue for nutrient element evaluation.

PLANT GENETICS (GEN)

358. Principles of Genetics. 5 hours.

Prerequisite: BIO 101-101L, 102-102L, or BOT 121-121L, 122-122L.

Introduction to the principles of heredity and variation as related to all organisms.

PLANT PATHOLOGY (PAT)

353-353L. Elementary Plant Pathology. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: BOT 121-121L, 122-122L or BIO 101-101L, 102-102L.

An introduction to the study of disease in plants.

356-356L. Crop Diseases. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: PAT 353-353L.

Principles of disease diagnosis and control and their application in the production of field and horticultural crops. (Offered Fall quarter.)

357. Turfgrass Diseases. 5 hours. Four lectures and one 4-hour lab period.

Prerequisite: PAT 353-353L and AGY 369.

Principles of diagnosis and control of turfgrass diseases and their application in the management of fine turfgrass areas such as parks, athletic fields, cemeteries, home lawns and golf courses.

383-383L. Forest Pathology. 4 hours. Three lectures and one lab period.

Students will learn to identify forest diseases, assess their potential impact, and learn management procedures which can be used to reduce the impact when justified. Students receive sufficient grounding in plant pathology to allow them to take additional courses if they desire.

391. Plant Pathology Internship. 5 hours.

Prerequisite: Permission of department, junior or senior standing.

Designed to give students an opportunity to gain practical experience in the application of plant pathological principles and procedures learned in formal classroom situations.

399. Special Problems. 2-5 hours.

Prerequisite: Appropriate basic courses.

Introduction to research or intensive study in special area of plant pathology, forest pathology, mycology, nematology, virology, bacteriology, or physiology.

406-406L. Etiology of Plant Diseases. 5 hours. Three lectures and two lab periods.

Prerequisite: PAT 353-353L.

A study of the non-mycological causes of infectious diseases of higher plants, with special reference to the biological characteristics and phytopathogenic mechanisms of viruses, bacteria and nematodes. (Winter quarter.)

415ABC. Plant Pathology Seminar. 1 hour each. Discussion of selected topics in plant pathology. (Offered all quarters except Summer.)

420-420L. (BOT) Introductory Mycology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BIO 101-101L, 102-102L or BOT 121-121L, 122-122L.

An introduction to the biology of the fungi, including a survey of all classes. (Offered Fall and Spring quarters.)

425. Plant Nematology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: PAT 353-353L or 383-383L.

Morphology and taxonomy of plant parasitic nematodes, with emphasis on characters used in identification. (Offered Winter quarter.)

428-428L. Diagnosis and Control of Plant Diseases. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: PAT 353-353L or equivalent.

Development of fundamental and practical knowledge for identification and control of plant diseases. (Offered Fall quarter.)

POULTRY SCIENCE (PS)

201ABC. Poultry Evaluation and Selection. 1 hour each.

A study of poultry and poultry product quality evaluation and selection standards. It provides students with the fundamental knowledge needed to participate or to instruct others in poultry judging activities.

202-202L. Introductory Poultry Science. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: BIO 101-101L.

An introductory course designed to cover the biology of the domestic fowl with emphasis on its application to poultry production.

360. Poultry Production. 5 hours. Three lectures and two lab periods.

Application of the principles of poultry science to the practice of poultry production. (Offered Fall quarter.)

371. Commercial Poultry Management. 5 hours.

Prerequisite: PS 360.

A detailed study of the management practices and principles used in the business of producing eggs and poultry meat. Emphasis is placed on the factors influencing costs and returns in poultry operations. (Offered Spring quarter.)

372. Poultry Breeding. 5 hours. Four lectures and one lab period.

Prerequisite: A course in genetics.

A consideration of the inheritance of morphological and physiological characters. Emphasis is placed on the development of criteria for selection and the development of genetically

sound poultry breeding programs. (Offered Winter quarter.)

375. Poultry Nutrition. 5 hours.

Prerequisite: PS 360.

The application of the principles of nutrition to the avian species. A study is made of the biochemical aspects of the individual nutrients and their supply in terms of feedstuffs and practical poultry diets. (Offered Winter quarter.)

379. Poultry Seminar. 1 hour.

Prerequisite: PS 360.

Open to all students in related fields. Topical discussion of current problems and papers of scientific work in poultry to be presented by the students. (Offered Winter quarter.)

380-380L. Avian Anatomy and Physiology. 5 hours. Three lectures and two lab periods.

Prerequisite: BIO 101-101L, 102-102L, or equivalent.

A lecture and laboratory study of avian systemic anatomy in conjunction with the related physiological functions. (Offered Fall quarter.)

386. (FS) Poultry Processing. 5 hours.

Prerequisite: PS 360 or FS 301 or FS 367.

A study of the basic principles and methods of processing poultry and eggs. Special emphasis will be placed upon broiler harvesting, slaughter and dressing, plant sanitation, microbiology, inspection, grading and basic product forms. A study of shell egg processing and handling will also be covered.

391. Poultry Business Internship. 5 hours.

Prerequisite: Basic courses in student's major, junior or senior status, and permission of department.

As part of the student's educational training, this course provides practical work experience and familiarizes the student with the operation and management of commercial poultry business firms.

399. Special Problems in Poultry Science. 2-5 hours.

Prerequisite: Junior standing.

Introduction to research or intensive study in a specialized area of poultry science.

401-401L. Avian Physiology. 5 hours. Three lectures and two lab periods.

Prerequisite: CHM 240 and 240L.

A study of the physiology of circulation, respiration, digestion, metabolism, and the nervous system of the fowl with emphasis on the glands of internal secretion. (Offered Spring quarter.)

405. Advanced Poultry Breeding. 5 hours.

Prerequisite: PS 372.

The development of practical poultry breeding programs. A study of the mode of inheritance and relative heritability of various characteristics of economic importance and criteria for effective selection toward their improvement. (Offered Spring quarter.)

430-430L. Poultry Products Technology. 5 hours.

Prerequisite: PS 360 or PS(FS) 386.

A study of the chemical, physical and organoleptic qualities as well as the further processing and product development of poultry meat and eggs. Special emphasis will be placed on the unique properties of poultry meat and eggs as a human food source.

433. Basic Mycotoxicology. 5 hours.

Prerequisite: BIO 102-102L and CHM 261 and 261L or equivalent.

A study of mycotoxins as they relate to agriculture. Various mycotoxins apt to occur in feedstuffs will be discussed. Major areas of emphasis are fungal producers, chemical and physical properties of the toxins, prevalence and distribution in nature, biological effects and mode(s) of action, and means of control. (Offered Spring quarter.)

437. Monogastric Nutrition. 5 hours.

Prerequisite: AS(DS) 330, CHM 240 and 240L, VPH 310 or PS 380-380L.

An advanced course in the comparative nutrition of monogastric animals with special but not exclusive consideration of poultry and swine. Guided studies of the literature of nutrition will be made, enabling the student to witness the discovery of nutrition principles and to distinguish between established fact and unsolved problems.

482-482L. Avian Embryology. 5 hours. Three lectures and two lab periods.

Prerequisite: BIO 101-101L, 102-102L, or permission of department.

A basic course in embryology, tracing development from fertilization through the various stages of differentiation. (Offered Winter quarter.)

THE FRANKLIN COLLEGE OF ARTS AND SCIENCES

ORGANIZATION AND ADMINISTRATION

Administrative Officers

William J. Payne, B.S., M.S., Ph.D., *Dean*

Charles W. James, B.S., M.S., Ph.D., *Associate Dean*

Robert W. John, B.S., M.Mus., Ed.D., *Associate Dean*

Calvin D. Hasbrouck, Jr., B.M., M.M., *Assistant Dean*

Carlton N. Mell, Jr., B.B.A., *Assistant to the Dean*

Norman G. Sansing, B.S., M.S., Ph.D., *Coordinator of Health Science Advising*

Lief H. Carter, B.A., J.D., Ph.D., *Coordinator of Pre-law Advising*

Objectives

The objectives of the faculty of the Franklin College are to advance and disseminate knowledge in the basic academic disciplines of the Arts and Sciences. The college offers its undergraduates both the fundamentals of a liberal education on which to base a lifetime of learning and the opportunity to concentrate in studies which form the foundation for professional pursuits. In concert with the Graduate School, the Franklin College offers graduate students opportunities for advanced study and research. The faculty strives to enrich the intellect and nurture the resourcefulness of the individual student so that he or she may deal with life's challenges with well-founded self-confidence and self-assurance. The objectives of the Franklin College are pursued by a faculty committed to high achievement in teaching and research and creative

activities confident in the quality and the vitality of our educational program.

Organization

The Franklin College is organized into several divisions.

Division of General Studies: All freshmen entering the College, and all transfer students who have not completed the divisional requirements are enrolled in this division. Upon the satisfactory completion of these requirements, students transfer to one of the major divisions of the College or to another school or college within the University.

The major divisions are:

Division of Biological Sciences: The Departments of Biochemistry, Botany, Entomology, Microbiology, Molecular and Population Genetics, Psychology, and Zoology.

Division of Fine Arts: The Departments of Art and Drama, and the School of Music.

Division of Language and Literature: The Departments of Classics, Comparative Literature, English, Germanic and Slavic Languages, and Romance Languages.

Division of Social Sciences: The Departments of Anthropology, Geography, History, Philosophy and Religion, Political Science, Psychology, Sociology, and Speech Communication.

Division of Physical Sciences: The Departments of Chemistry, Geography, Geology, Mathematics, Physics and Astronomy, and Statistics and Computer Science.

Division of Interdisciplinary Studies: The Afro-American Studies Program, French Studies Program, German Studies Program, Global Studies Program, Latin American Studies Program, Medieval Studies Program, Women's Studies Program, Criminal Justice Program, and Interdisciplinary Studies Major Program.

The Franklin College offers several baccalaureate degrees and participates in several combined degree programs. Each of these degrees requires a liberal education in the division of general studies and a concentration or major in one of the major divisions. In addition, several certificate programs allow students to combine a major in one discipline with interdisciplinary work in others. To be admitted to the College of Arts and Sciences, students must meet the admission requirements of one of the divisions.

THE DIVISION OF GENERAL STUDIES

Degrees Offered. The Division of General Studies has no degree programs.

Admission Requirements. Freshmen entering the Division of General Studies must have a minimum SAT score and a minimum predicted grade point average appropriate to the time of admission. These minimums are available in the dean's office.

Students transferring to the Division of General Studies from another school or college in the University, or from another institution of higher education, must satisfy the freshman requirement in force at the time of transfer.

The Admissions Committee of the college must approve all exceptions.

Academic Dismissal. The University regulations concerning probation and dismissal apply to all students in the division.

Transfer to a Major Division. Upon the satisfactory completion of the requirements of this division, (which is usually accomplished during the first two years), a student transfers either to one of the several departments of the College or to another school or college within the University. To complete the requirements of the Division of General Studies, satisfactory grades must be made in the following:

English 101 and 102

The basic mathematics courses appropriate to the degree sought.

At least thirty quarter hours in the areas of social science, science, fine arts, history, literature, philosophy, and religion appropriate to the degree sought.

Although not mandatory, it is strongly recommended that the student complete a minimum of two quarters of a foreign language while in this division.

Some programs of study may have additional requirements to those of the General Studies Division. Students should consult with an appropriate advisor for this specific information.

Transfer to Another School or College.

Each school or college in the University has its own regulations concerning transfer. The student should contact the appropriate dean well in advance of the expected date of transfer. There are several pre-professional advising programs in the Franklin College which are described in a later section of this bulletin.

THE MAJOR DIVISIONS

Degrees and Programs Offered. The following degrees are offered by the College of Arts and Sciences:

BACHELOR OF ARTS, in which the major may be in any major division of the College, in Economics or in the Area Study major of the Honors Program.

BACHELOR OF SCIENCE, in which the major must be in the Divisions of Biological or Physical Sciences, in Geography, the Area Study Major of the Honors Program, or the Interdisciplinary Studies Major of the Division of Interdisciplinary Studies.

BACHELOR OF SCIENCE IN CHEMISTRY, in which the major must be Chemistry.

BACHELOR OF SCIENCE IN PHYSICS, in which the major must be Physics.

BACHELOR OF SCIENCE IN PHYSICS AND ASTRONOMY, in which the major must be in Physics and Astronomy.

BACHELOR OF FINE ARTS, in which the major must be in the Division of Fine Arts or the Interdisciplinary Major of the Division of Interdisciplinary Studies.

BACHELOR OF MUSIC, in which the major must be in Music.

JOINT DEGREE PROGRAMS. For students of superior scholastic standing, the Franklin College offers programs leading to a baccalaureate degree from the College combined with a professional degree or program from another school or college. They are:

Bachelor of Science, offered with the Medical College of Georgia.

Bachelor of Science, offered with the College of Veterinary Medicine at the University.

Bachelor of Science and Bachelor of Science in Engineering, offered with the Georgia Institute of Technology.

Combined Bachelor-Master Degree, offered with the Graduate School at the University.

For students with dual interests, the possibility of earning a double major exists. Also, there are several programs which may be combined with majors in other areas: Afro-American Studies Program, French Studies Program, German Studies Program, Global

Studies Program, Latin American Studies Program, Medieval Studies Program, Women's Studies Program, the Pre-Theology program and the A.B. or B.S. with provision for a teaching certificate. Each of these degrees and programs is described below.

Admissions Requirements. Admission to a major division is by transfer only.

TRANSFER FROM THE DIVISION OF GENERAL STUDIES (see the earlier section titled "Transfer to a Major Division").

TRANSFER FROM ANOTHER SCHOOL OR COLLEGE IN THE UNIVERSITY OR FROM ANOTHER INSTITUTION OF HIGHER EDUCATION. Requirements for entry to a major division are:

- (a) The student must have earned at the University and/or transferred to the University at least 90 hours of college credit.
- (b) The student's predicted grade point average must not be less than 2.5 for students transferring from outside of the University, or less than 2.3 for students transferring from another school or college in the University.
- (c) The student must supply SAT scores if they are not already on file at the University.
- (d) The student must have completed:
 - (1) ENG 102
 - (2) The basic mathematics courses appropriate to the degree sought (item 5 in the degree requirements)

If any of these requirements is not met, provisional admission can be arranged. Provisional admission will not extend beyond 45 hours of work in the University.

Academic Dismissal. The University regulations concerning probation and dismissal apply to all students in any major division.

Transfer to Another Division, College or School. Once admitted to a major division in the College, a student may transfer to any other division and/or degree program in the Franklin College by satisfying the admission requirements of that program, if any, and filling out the appropriate form in the dean's office.

Double Major. A double major is two separate majors in the same degree. A double major is earned when the requirements for a major in each of the two areas are satisfied and the requirements for the degree are satisfied. It is sometimes possible to count the same course twice, once in each major, in satisfying the major requirements. When two separate degrees are earned, this is called a dual degree. See the Academic Program section of this bulletin for regulations.

Minor. Many departments and programs offer the chance to earn a minor by taking twenty hours of approved courses. Contact the individual department or program for particulars.

BACHELOR OF ARTS DEGREE REQUIREMENTS

The program of study leading to the A.B. degree permits the student to major in any department in the College, as well as in Economics, Criminal Justice, Interdisciplinary Studies, and Area Studies.

HOURS

1. *English:* ENG 101*, 102*. 10
2. *Literature:* Any two courses from the following: CLC 120, 121, 150; CML 221*, 222*; ENG 231G*, 232G*, 233G*; any 400-level LAT or GRK courses; FR or SP 211*, 310*, 311*, 312*; SP 313*; ITA 310*, 311*; GER 201*, 202*; RUS 401*, 402*. 10
3. *Foreign Language:* Completion or exemption through the fourth quarter of one language: French, German, Greek, Hebrew, Italian, Latin, Portuguese, Russian, Spanish. 20
4. *History:* Any two courses from HIS 111-399. 10
5. *Mathematics:* (a) credit for or exemption from MAT 100 and (b) two courses from mathematics, statistics and computer science for which MAT 100 or its equivalent is a prerequisite. PHY 110 may replace one course in (b) and MAT 103-207 may replace (b) for the major in economics. 15
6. *Social Sciences:* Courses from two or more disciplines: anthropology, economics, geography (not physical geography), LIN 210, political science, psychology, sociology, speech. 20
7. *Fine Arts/Philosophy/Religion:* Three courses from the following, in at least one fine arts course and either one philosophy or one religion course. ART 287, 288, 289, 300; DRA 300, 312, 320; MUS 300, 355; philosophy (not logic); religion. 15

*Before attempting to schedule these courses, check their prerequisites in the list of courses.

	HOURS
8. <i>Science</i> : Two courses from each division, including at least one lab sequence. <i>Biological Sciences Division</i> : BIO 101-101L, 102-102L* or 111-111L*, 112-112L*; BOT 121-121L 122-122L*.	10
<i>Physical Sciences Division</i> : AST 107-107L, 108-108L*; CHM 111 and 111L, 112 and 112L* or CHM 121 and 121L*, 122 and 122L*; GGY 120-120L, 121-121L, 122-122L (any two); GLY 115-115L, 116-116L or 125-125L, 126-126L*; PCS 127-127L*, 128-128L* or 137-137L*, 138-138L*; GGY 104, PCS 101* (non-lab sequence).	10
9. <i>Major</i> : An approved program of courses totaling 40 quarter hours with a minimum grade of C in each course. 20 hours must be taken in residence in the major subject area in courses numbered 300 or higher. <i>Major Related</i> : 20 quarter hours in the major or the same division of the College with no less than 10 quarter hours in courses numbered 300 or higher.	40
10. <i>Basic Physical Education</i>	5
11. <i>Electives</i> : (No more than 15 hours of electives may be taken in the major or in courses outside of the Franklin College of Arts and Sciences.)	30
<i>Total required for graduation</i> (No credit for basic physical education beyond 5 hours; basic ROTC or ENG 100 may count in this total.)	195

BACHELOR OF SCIENCE DEGREE REQUIREMENTS

The program of study leading to the B.S. degree permits the student to major in any department in the Divisions of Biological or Physical Sciences as well as in Interdisciplinary Studies and Area Studies.

1. <i>English</i> : ENG 101*, 102*.	10
2. <i>Literature</i> : Any two courses from the following: CLC 120, 121, 150; CML 221*, 222*; ENG 231G*, 232G*; any 400-level LAT or GRK courses; FR or SP 211*, 310*, 311*, 312*; SP 313*; ITA 310*, 311*; GER 201*, 202*; RUS 401*, 402*.	10
3. <i>Foreign Language</i> : Completion or exemption through the third quarter of one language: French, German, Greek, Hebrew, Italian, Latin, Portuguese, Russian, Spanish.	15
4. <i>History</i> : Any two courses from HIS 111-399.	10
5. <i>Mathematics</i> : MAT 100 (required if not exempted), MAT 116* (or 109*); MAT 253* (required if not exempted).	15
6. <i>Social Sciences</i> : Two courses from any of the following: anthropology, economics, history, geography (not physical geography), LIN 210, philosophy (not logic), political science, psychology, religion, sociology, speech.	10
7. <i>Fine Arts/Philosophy/Religion</i> : One course from fine arts and one course from philosophy (not logic) or religion.	10
8. <i>Science</i> : Three 10-hour sequences from the following: AST 107-107L, 108-108L*; BIO 101-101L, 102-102L* or 111-111L*, 112-112L*; CHM 121 and 121L*, 122 and 122L* or 127 and 127L*, 128 and 128L*; GGY 120-120L, 121-121L, 122-122L (any two) or GLY 125-125L, 126-126L*; PCS 127-127L*, 128-128L* or 137-137L*, 138-138L*.	30
9. <i>Math/Science Electives</i> : Any courses in the Biological or Physical Sciences Division (including mathematical sciences and psychology).	20
10. <i>Major</i> : An approved program of courses totaling 40 quarter hours with a minimum grade of C in each course. 20 hours must be taken in residence in the major subject area in courses numbered 300 or higher. <i>Major Related</i> : 20 quarter hours in the major or the same division of the College with no less than 10 quarter hours in courses numbered 300 or higher.	40
11. <i>Basic Physical Education</i>	5
12. <i>Electives</i> : (No more than 15 hours	

*Before attempting to schedule these courses, check their prerequisites in the list of courses.

may be taken in schools or colleges other than the Franklin College of Arts and Sciences.) 20

Total required for graduation (No credit for basic physical education beyond 5 hours; basic ROTC, CHM 111 and 111L or 112 and 112L, ENG 100, GGY 104 or PCS 101 may count in this total.) 195

BACHELOR OF FINE ARTS DEGREE REQUIREMENTS

The program of study leading to the B.F.A. degree permits the student to major in Interdisciplinary Studies and in several areas in the Division of Fine Arts, including Studio Art (eight fields of concentration), Drama (three fields of concentration), and Music Literature.

HOURS

1. *English*: ENG 101*, 102*. 10
2. *Literature*: Any two courses from the following: CLC 120, 121, 150; CML 221*, 222*; ENG 231G*, 232G*; any 400-level LAT or GRK courses; FR or SP 211*, 310*, 311*, 312*; SP 313*; ITA 310*, 311*; GER 201*, 202*; RUS 401*, 402*. 10
3. *Foreign Language*: Completion or exemption through the fourth quarter of one language: French, German, Greek, Hebrew, Italian, Latin, Portuguese, Russian, Spanish. 20
4. *History*: Any two courses from HIS 111-399. 10
5. *Mathematics*: MAT 100. 5
6. *Social Science*: One course from the following: anthropology, economics, geography (not physical geography), LIN 210, political science, psychology, sociology, speech. 5
7. *Philosophy/Religion*: One course from philosophy (not logic) or religion. 5
8. *Science*: Two courses from each division, including at least one lab sequence. 10
Biological Sciences Division: BIO 101-101L, 102-102L* or 111-111L*, 112-112L*; BOT 121-121L, 122-122L*.
Physical Sciences Division: AST 107-107L, 108-108L*; CHM 111 and 111L, 112 and 112L* or 121 and

121L*, 122 and 122L*; GGY 120-120L, 121-121L, 122-122L (any two); GLY 115-115L, 116-116L or 125-125L, 126-126L*; PCS 127-127L*, 128-128L* or 137-137L*, 138-138L*; GGY 104, PCS 101* (non-lab sequence). 10

9. *Major*: An approved program of courses totaling 40 quarter hours with a minimum grade of C in each course. 20 hours must be taken in residence in the major subject area in courses numbered 300 or higher. *Major Related*: 20 quarter hours in the major or the same division of the College with no less than 10 quarter hours in courses numbered 300 or higher. 40
10. *Basic Physical Education* 5
11. *Electives*: No more than 15 hours of electives may be taken in courses outside the Franklin College of Arts and Sciences.

Total required for graduation: (No credit for basic physical education beyond 5 hours; basic ROTC or ENG 100 may count in this total.) 195

12. a) All prospective candidates for the B.F.A. in Art must compile a cumulative 2.5 grade point average in the basic art core courses: ART 120, 130, 230, 240, 287, 288 before admission and/or transfer into the Major Division in Art.
- b) All prospective candidates for the B.F.A. in drama must apply for review by the faculty and have completed DRA 230, 250, 315 and 320 with a grade of B or better before admission into the program.
- c) All prospective music majors are required to take an admission audition in applied music. This audition is evaluated by a faculty jury in the appropriate area of applied music. Students are expected to be prepared to play or sing representative works from their repertoire. Further requirements are:
 - (1) Pass a keyboard proficiency test;
 - (2) Participate in the performing organization appropriate to the major performance medium each quarter (e.g., string majors participate in orchestra, vocal majors participate in choral organization, etc.); and
 - (3) Attend and participate in a minimum number of recitals per quarter.

*Before attempting to schedule these courses, check their prerequisites in the list of courses.

ADDITIONAL REQUIREMENTS FOR A.B., B.S., AND B.F.A. DEGREES

13. A minimum grade of 2.0 is required in ENG 101.
14. A minimum grade point average of 2.0 is required in ENG 101, 102.
15. Satisfactory completion of an examination or a designated course on the history of the U.S. and Georgia is required. The exemption exam, offered by the Office of Testing and Evaluation, may be taken only once. Examinations are given only once each quarter; dates are announced in the *Schedule of Classes*. A passing grade (D) in one of the following courses will also satisfy the U.S. and Georgia history requirement: HIS 251, 252, 253H, or 254H.
16. Satisfactory completion of examinations or designated courses on the Constitutions of the U.S. and Georgia is required. The exemption exam, offered by the Office of Testing and Evaluation, may be taken only once. Examinations are given once each quarter; dates are announced in the *Schedule of Classes*. A passing grade (D) in POL 101 at an in-state institution will satisfy the requirement. Persons transferring POL 101 from out-of-state institutions will be required to take the exam on the Georgia Constitution or take an equivalent course. See the Academic Program section for a list of approved courses.
17. Successful completion of the Regents' Test is required. The test should be taken as soon as 45 hours of academic work have been successfully completed.
18. The minimum residence requirement for a baccalaureate degree is 90 quarter hours of successfully completed work. At least 20 hours of major work must be taken in residence.
19. A minimum grade point average of 2.0 is required to graduate.
20. The Senior Exit Examination is required of all University of Georgia seniors prior to graduation.

General Education Courses

A group of courses in the current Arts and Sciences curriculum has been designated as General Education Courses. The current list of these courses will be found in each quarter's *Schedule of Classes*, as this list will be expanded as new courses are approved for the program.

Students are encouraged to take these broadening courses in the Humanities, Social Sciences, and Sciences, and should seek the advice of their advisor in scheduling them.

Honors Courses

Appropriate honors courses may substitute for corresponding courses in this curriculum.

Advanced Placement

Through Advanced Placement a student may exempt a course with or without credit. Exemption of a course with credit is equivalent to completing the course. This credit counts toward the 195 hours required for graduation and may be used to satisfy core curriculum requirements. If a course is exempted without credit, a core curriculum requirement may be met. If so, the student has the opportunity to choose an equivalent number of credit hours in electives in order to meet overall graduation requirements. For further information concerning Advanced Placement, inquire at the Honors Office in the Academic Building.

Waiver of Degree Requirements

Course substitutions or waiver of requirements may be made only upon written approval of the dean or the Senate Committee on Academic Standards of the College of Arts and Sciences. In some cases, specific courses listed in the degree requirements may be replaced by higher level courses. Consult with an advisor for particulars.

Application for Graduation

After earning 135 hours, students must apply for graduation in the Registrar's Office, Academic Building, and have their program certified by the dean. Failure to do this at the beginning of the senior year may result in postponement of graduation date.

Academic Advising

Academic advising in the Franklin College of Arts and Sciences is provided by a combination of professional advisors and faculty members. While in the General Studies Division, most students will be advised in the New College building during the advisement

*Before attempting to schedule these courses, check their prerequisites in the list of courses.

period. To arrange for advising, the student must sign up in person for an appointment in New College.

Once students have been admitted to a major division, they should go to the department in which they have chosen to major for assignment of a permanent faculty advisor.

Students with general questions or problems concerning academic matters are encouraged to contact the Coordinator of Academic Advising in the Dean's Office, New College Building.

OTHER DEGREE PROGRAMS

A.B. Degree with a Major in Criminal Justice

The major in Criminal Justice is an interdisciplinary program utilizing courses from the departments of Political Science, Psychology, and Sociology. In addition to a 40-hour program of courses for the major, a 15-hour internship is required in which the student synthesizes the theory of the classroom with the practice of a criminal justice agency. In order to provide a quality internship, the program limits enrollment. For particulars on the program and admission procedures, inquire of the Director of the Criminal Justice Program in Baldwin Hall.

A.B. Degree with a Major in Economics

In cooperation with the Department of Economics in the College of Business Administration, the Franklin College of Arts and Sciences awards the A.B. degree with a major in Economics. For further information, contact the advising office in New College or the Department of Economics.

Bachelor of Science in Chemistry

The curriculum for this degree offers training in the field of chemistry and its allied sciences for students who desire to enter commercial or government laboratories or the teaching profession, to become associated with chemical industries in a non-technical position, or to pursue graduate work in chemistry in order to enter some field of research or college teaching.

All students who satisfactorily complete this curriculum are certified by the Department of Chemistry to the American Chemical Society as having completed the undergraduate training recommended by the A.C.S. An average of 2.5 or higher is required in

chemistry and in other academic subjects in both the lower and upper division programs. No transfer students will be accepted as candidates for this degree later than the beginning of their junior year. Students wishing to obtain this degree should enter the University no later than the beginning of their sophomore year. For further information, inquire of the head of the Department of Chemistry.

Bachelor of Science in Physics or in Physics and Astronomy

The curricula for these degrees are designed to give the best preparation possible to those students who desire to pursue a career in physics or astronomy. They provide the necessary foundation for those students who wish to do graduate work toward advanced degrees so that they may enter some field of research or college teaching, for those who wish to seek employment in commercial and governmental laboratories, and for those interested in entering the teaching profession at the high school level.

No grade below 2.0 in any physics or astronomy or mathematics course is creditable toward this degree program, and a grade average of 2.5 or higher is required in these courses. For further information, inquire of the head of the Department of Physics and Astronomy.

Bachelor of Music

The B.Mus. degree is a professional degree in music, specifically designed to comply with the guidelines of the National Association of Schools of Music. Majors are possible in applied music performance, composition, music education and music therapy. The admission requirements for music majors in the B.F.A. program apply to this degree. For specific requirements for a Bachelor of Music degree, the student should inquire of the head of the School of Music.

Bachelor of Science (Pre-Medicine) and Bachelor of Science (Pre-Dentistry)

A baccalaureate degree is generally required for admission to a school of medicine or dentistry; hence most students are advised to follow the regular B.S. or A.B. programs outlined earlier in this section and to include those courses prerequisite for admission to the medical or dental school of their choice. However, students of outstanding ability who are admitted to the School of Medicine or the School of Dentistry, Medical College of 103

Georgia, before completion of the baccalaureate degree may be awarded the B.S. (Pre-Medicine) or the B.S. (Pre-Dentistry) from the University upon successful completion of the first year in professional school, if they satisfy the requirements. (Neither the satisfactory completion of the program nor a baccalaureate degree assures admission to any medical or dental school.) For information on the requirements and general pre-medical and pre-dental advising, see the pre-med advisor of the College of Arts and Sciences.

Bachelor of Science (Pre-Veterinary Medicine)

Advisors: Milton Adsit and Michael D. Lorenz, College of Veterinary Medicine

This program is designed for those students who wish to obtain both the B.S. and D.V.M. degrees. Under this program students may, after the successful completion of their first year at The University of Georgia College of Veterinary Medicine, receive the B.S. degree. The student considering this option should realize that competition for admission to the College of Veterinary Medicine is such that there are four to five persons applying for each available position. Students should therefore have one or more alternative careers in mind in the event that they are not accepted. It is strongly recommended that the student be enrolled in an undergraduate degree program.

Bachelor of Science and Bachelor of Science in Engineering

The University of Georgia cooperates with the Georgia Institute of Technology in offering a five-year program leading to a B.S. degree from The University of Georgia and the B.S. degree in Engineering from the Georgia Institute of Technology. All students interested in this program should visit the advising office in New College.

Bachelor of Arts or Bachelor of Science (with Provisions for a Professional Secondary School Teaching Certificate)

Either degree requires that some courses be taken in both the College of Education and in the Franklin College of Arts and Sciences. Students interested in meeting teacher certification requirements should inquire at both the Office of Student Personnel Services, College of Education, and in the Franklin College of Arts and Sciences to determine their ap-

propriate advisors. Each student's program must then have the approval of both advisors and the dean's office of each college.

Combined Bachelor/Master Degree

Certain exceptional students entering the University each year with unusual academic achievements may have potential to plan a curriculum leading directly to a master's degree during the four-year period normally used to complete the baccalaureate. This combined bachelor/master degree objective is perhaps the greatest academic challenge offered by the University.

A student interested in this degree objective submits credentials for evaluation to the Honors Program (or to the academic advisor in Arts and Sciences). Candidates should have obtained at least 25 credits (English, foreign languages, mathematics, history, political science, biology, chemistry, and others) through the Advanced Placement Program. Each candidate should:

- be ready to begin sophomore studies during the first year here;
- have balanced Scholastic Aptitude Test (SAT) scores totaling 1300 or above;
- come with a general inclination for a major;
- exhibit motivation;
- provide supporting credentials that indicate other superior academic achievements.

PRE-PROFESSIONAL PROGRAMS

Pre-Forest Resources Program

Advising in the School of Forest Resources

Details regarding admission to the professional program appear in the School of Forest Resources section of this bulletin. The specified 90-hour pre-professional forest resources curriculum must be completed while The University of Georgia underclassman is enrolled in the College of Arts and Sciences.

Pre-Journalism Program

Advising in the College of Arts and Sciences

To be admitted to the professional program in the School of Journalism and Mass Communication, a student must have completed a minimum of 90 quarter hours and other requirements that are listed in the School of Journalism and Mass Communication section of this bulletin. Details regarding the Bachelor of Arts in Journalism (A.B.J.) degree requirements also appear in that section.

Pre-Nursing Program

The University of Georgia does not offer a degree in pre-nursing or nursing. Advising is available for students who wish to learn more about the freshman and sophomore prerequisite courses for a nursing curriculum. An advisor will also assist students in applying to other colleges which offer a nursing degree.

A popular choice for pre-nursing students from around the state is the Medical College of Georgia's nursing program. MCG operates its nursing program in two locations—Augusta and Athens; the Athens facility is called SONAT (School of Nursing at Athens). To be eligible for either location, students must first be accepted by the Medical College of Georgia in Augusta.

Pre-Pharmacy Program

Advisor: Lestina Tebo, College of Pharmacy

To be admitted to the professional program in the College of Pharmacy, the student must have completed the 90 quarter hours of pre-pharmacy coursework. Applicants should take the Pharmacy College Admission Test during the fall term immediately prior to their entrance date. Students with a high academic average, having 90 hours of credit, may be admitted with not more than 5 quarter hours of deficiencies in non-science required courses, provided such deficiencies will be completed before the second professional year.

For complete information concerning the pre-pharmacy core curriculum requirements, refer to the College of Pharmacy section. For information concerning the pharmacy professional program, refer to the College of Pharmacy Bulletin, available by writing: Dean, College of Pharmacy, The University of Georgia, Athens, Georgia 30602.

Application should normally be made to the dean of the College of Pharmacy during the Fall term of the sophomore year.

Pre-Theology Program

Students planning to enter a theological seminary following graduation from the University should consult the appropriate advisor in the Department of Religion no later than the beginning of their junior year.

Pre-Medicine and Pre-Dentistry

Coordinator of Advising: Norman Sansing, Franklin College of Arts and Sciences

The Franklin College does not offer a degree in pre-medicine or pre-dentistry, but a complete advising program is available in the advising office, New College, to students

wishing to enter a medical or dental school after completion of a regular bachelor's degree.

Pre-Law

Coordinator of Advising: Lief Carter, Franklin College of Arts and Sciences

A complete advising program is available to any student who considers attending law school after completion of a bachelor's degree. The Franklin College's *Pre-Law Guide* can be obtained by mail or at 212F New College.

Pre-Veterinary Medicine

A complete advising program is available in the advising office, New College, to students who plan to transfer to the College of Veterinary Medicine. See the College of Veterinary Medicine section of this bulletin for a description of the admission procedures for this College.

Allied Health Fields

Most four-year degree programs in allied health fields, such as Medical Technology, Nursing (see SONAT Program in the Academic Program section), Physical therapy, etc., require two years of general studies followed by two years of specialization. The University does not offer baccalaureate degrees in allied health; however the dean's office offers interested students advising for the two years of general studies and assistance in applying to schools that offer the specialized training.

OTHER PROGRAMS

Interdisciplinary Studies Major

Coordinator: Calvin D. Hasbrouck, Dean's office

A student may have an unusual but definite academic interest for which no suitable major is offered by any department in the Franklin College of Arts and Sciences. Those who have successfully completed at least 45 quarter hours of college-level work, or its equivalent, with a grade point average of 2.5 or higher may, with the permission of the Chairman of the Interdisciplinary Degree Program, plan their own major. Standard programs exist in the following areas: Geophysics, Linguistics, Neurobiology, and Scientific Illustration.

The Interdisciplinary major must consist of an approved and coherent pattern of courses in more than one department. The

thrust of the program is such that the emphasis is on early planning and design. Programs which reflect an attempt to "pull something together" near the end of the undergraduate program or to look back and attempt to create a theme to fit courses already completed are not in keeping with the spirit of the interdisciplinary major.

In planning the program of study, the student's early selection of a faculty advisor and advisory committee is essential. The major advisor and advisory committee must be approved by the chairman of the division. The preparation of the proposed program of study for the interdisciplinary major is a joint effort between the student and the faculty advisor or advisors, and there will be continued contact between the two parties. The completed program proposal must be submitted to the Chairman of the Division of Interdisciplinary Studies for review and approval. Any subsequent changes in the original proposal must also be approved by the chairman.

Proposals for an interdisciplinary degree major may be submitted to the Chairman of the Division of Interdisciplinary Studies by any student in the Franklin College of Arts and Sciences.

Area Studies Major

The Area Studies major is similar in intent and design to the Interdisciplinary Studies major, but is open only to Honors Program participants.

CERTIFICATE PROGRAMS

Afro-American Studies Program

The Afro-American Studies Program exists to provide a central focus to the study of the contribution, role, and impact of the black African and black American in our society. Through cooperation with existing departments in coordinating course offerings in the area, a Certificate in Afro-American Studies is offered. Any student in the University may earn this certificate by acquiring 20 quarter hours of credit in approved courses. In addition to the certificate, the program sponsors events that support a quality education. A major in Afro-American Studies is available through Interdisciplinary Studies. Further information may be obtained about Afro-American Studies from the advising office in New College.

Some of the courses approved for credit toward the Certificate in Afro-American Studies are:

ANT 445. Africa: Peoples and Institutions. 5 hours.

DRA 448. Afro-American Drama. 5 hours.

ENG 323. Survey of Afro-American Literature. 5 hours.

HIS 381F, 381P. African Civilization. 5 hours each.

HIS 418P. Modern Black America. 5 hours.

LIN(ENG) 404T. The Structure of Black English. 5 hours.

MUS 301. Jazz History. 5 hours.

POL 438. African Political Systems. 5 hours.

SOC 402. Structure and Functioning of American Society with Emphasis on Black Structure. 5 hours.

SPC 355. Studies in Black Rhetoric. 5 hours.

SW 444. The Afro-American Family: Practice and Theory in Social Work. 5 hours.

French Studies Program

Coordinator: Jean-Pierre J. Piriou, Department of Romance Languages

The French Studies Program at The University of Georgia offers the student an opportunity to share in a current national interest in French Studies and, at the same time, to develop a humanistic understanding of French civilization through the study of the French language, history, art, government, geography, literature, and philosophy.

The French Studies Program is based on a departmental major leading to the Bachelor of Arts or Bachelor of Science degree. The curriculum in French Studies with a departmental major includes the prescribed number of credit hours for the baccalaureate degree as well as 40 quarter hours of French content courses chosen from at least three fields. (Courses taken within the major may be counted in fulfillment of this requirement but no more than 20 hours in one discipline will be accepted.) Interested students must apply and be admitted to the program before the end of the first quarter of their sophomore year. Students completing the requirements of this special program of study will receive the Certificate in French Studies upon graduation.

With the following exceptions, all French courses numbered greater than 210 are approved for credit toward the Certificate in French Studies: FR 350, 352, 355, 395, 396, 397, 495, 496, 497, 496H, 497H, 498H, 499H, and 503.

Courses in other areas include:

ART 466. Architecture and Decoration in 18th-Century France and England. 5 hours.

GGY 444. Europe and the Mediterranean. 5 hours.

HIS 445P. Medieval France, 987-1498. 5 hours.

HIS 452F. The French Revolution and Napoleon. 5 hours.

HIS 453M. France in the 19th and 20th Centuries. 5 hours.

POL 203. Introduction to Global Studies. 5 hours.

POL 425. American Foreign Policy. 5 hours.

Applications for admission to the program and further information may be obtained from the coordinator of the French Studies Program.

German Studies Program

Coordinator: Lindsey S. Rogers, Jr., Department of Germanic and Slavic Languages

The German Studies Program, established in 1979, offers the student a thorough and systematic study of German which will augment his or her particular discipline or major. The study of foreign languages, German in particular, is becoming increasingly important and greatly enhances the student's possibilities for entering and advancing in a broad variety of careers and occupations.

The student may earn the German Language Certificate and/or the Certificate in German Studies in conjunction with his or her work for the Bachelor's Degree. The former emphasizes the study of the language with primary emphasis on conversation, composition, stylistics and techniques of translation. The requirements for this program are twenty hours in German courses above the GER 104 level with no specific requirements other than GER 210, Conversation and Composition or GER 410, Advanced Composition and Conversation (a continuation of GER 210). The latter program is interdisciplinary and is designed to integrate the study of German with other disciplines such as art, economics, geography, history, music, philosophy, political science, etc. The requirements for this program are fifteen hours in German courses above the GER 104 level plus fifteen hours of courses from outside the German Department.

With few exceptions, all German courses above the 104 level count for credit toward either certificate. Courses in other areas which are approved for the German Studies Program include:

ART 482. Backgrounds of Modern Art, 19th Century. 5 hours.

ECN 480. International Trade: Theory and Policy. 5 hours.

HIS 445M. Medieval Intellectual Survey. 5 hours.

HIS(GER) 452P. A Review of German History Since the Reformation. 5 hours.

HIS 453P. The Emergence of Modern Germany, 1800-1914. 5 hours.

PHY 302. Existentialism. 5 hours.

POL 425. American Foreign Policy. 5 hours.

POL 435. Western European Political Systems. 5 hours.

Interested students are urged to apply and be admitted to the program of their choice before the end of their sophomore year.

Further information may be obtained from the coordinator of the German Studies Program.

Global Studies Program

Director: Martin J. Hillenbrand, Department of Political Science

The Global Studies Program offers students an opportunity to prepare themselves broadly for international careers. The program consists of a general core (15 hours), a usable foreign language (10 hours in conversation and composition) and a geographic and functional specialty (25 hours). The interdisciplinary core is designed to provide a global perspective on living in an increasingly complex world. The foreign language requirement enhances the ability to communicate in a global context. The geographic specialty ensures some appreciation for cultures other than our own, such as Africa, the Americas, Asia, Europe and the Middle East. Finally, the functional specialty enables us to understand and become engaged in transnational activity affecting one or more global issues, e.g., arms and security, development, trade and economic interdependence, energy, environment, food, human rights, and population.

With careful planning most students can earn the Certificate in Global Studies by taking only courses they already need to satisfy requirements for the baccalaureate degree. Since the global studies requirements involve both lower and upper division courses, it is advantageous for students to plan their global studies coursework and incorporate it into their general program of study as early as possible. Interested students will be asked to develop a special program of study which satisfies the certificate requirements and has the approval of their academic advisor and the Center for Global Studies. Students completing this special program of study will

receive the Certificate in Global Studies upon graduation.

The following courses are representative of those which may be taken in fulfillment of the core requirement for the Certificate in Global Studies:

ANT 310. Peoples of the World. 5 hours.

ANT(LIN) 383. Languages of the World. 5 hours.

GGY 101. Geography of the Developed World. 5 hours.

GGY 102. Geography of the Underdeveloped World. 5 hours.

POL. 203. Introduction to Global Studies. 5 hours.

POL. 320. Contemporary Global Issues. 5 hours.

REL 116. Religious Perspectives of Mankind. 5 hours.

Applications for admission to the program and further information may be obtained from the Center for Global Studies.

Latin American Studies Program

Acting Coordinator: Carmen Chaves McClen-
don, Department of Romance Languages

The Latin American Studies Program was established to coordinate and develop facilities at the University to provide interdisciplinary preparation for students who are planning careers that require specialized knowledge of the Latin American republics and the Inter-American system.

The Latin American Studies program is based on a departmental major leading to the Bachelor of Arts degree. The curriculum in Latin American Studies with a departmental major includes the degree as well as 40 quarter hours of Latin American content courses chosen from at least four fields. Courses taken within the major may be counted in fulfillment of this requirement. Students completing the requirements of this special program of study will receive the Certificate in Latin American Studies upon graduation. Interested students must apply and be admitted to the program before the end of their sophomore year.

Among those courses approved for credit toward the Certificate in Latin American Studies are:

POR 420. Masterpieces of Luso-Brazilian Literature. 5 hours.

SP 312. Spanish American Literature to the End of the 19th Century. 5 hours.

SP 313. Spanish American Literature from the End of the 19th Century to the Present. 5 hours.

SP 411. Spanish American Culture and Civilization. 5 hours.

SP 481. Modernism. 5 hours.

SP 491. Contemporary Spanish American Literature. 5 hours.

Applications for admission to the program and further information may be obtained from the coordinator of the Latin American Studies Program.

Medieval Studies Program

Coordinator: Joseph Berrigan, Department of History

Students of the medieval period, whatever their area, have discovered that an interdisciplinary approach is necessary to achieve an expertise in, and an understanding of, their field. The University of Georgia Medieval Studies Program, established in 1974, is intended as an aid and an official means whereby undergraduate or graduate students can complete their degree in one of the established disciplines, along with a concentration in interdisciplinary medieval studies.

For the undergraduate who wishes to specialize in Medieval Studies, the program offers 20 hours within a traditional department combined with another 20 in related areas. The individual student program is developed in consultation with a major professor and is then approved by the Steering Committee of the Medieval Studies Program. Upon completion of this program, the A.B. candidate is awarded the Certificate in Medieval Studies as well as the diploma.

The Certificate in Medieval Studies could include credit for any of the following courses:

ART 493B. Early Medieval Art. 5 hours.

CML 411. Medieval Narrative. 5 hours.

ENG 423T. Non-Chaucerian Medieval Literature. 5 hours.

ENG 425T. Medieval Drama. 5 hours.

HIS 344M. Medieval Civilization. 5 hours.

HIS 445F. Medieval England, 1066-1485. 5 hours.

HIS 445M. Medieval Intellectual Survey. 5 hours.

MUS 321. History of Music I. 3 hours.

PHY 321. History of Philosophy — Medieval. 5 hours.

REL 342. History of Christian Theology, Medieval. 5 hours.

Women's Studies Program

The Women's Studies Program, established in 1977, is designed to integrate the needs, interests, and contributions of women into the

already existing educational programs at the University. In addition to sponsoring colloquia and cooperating with existing departments in coordinating course offerings at the graduate and undergraduate levels, the program offers a Certificate in Women's Studies. Any undergraduate student at the University may earn the certificate by completing a program of study that includes 30 quarter hours of approved Women's Studies courses in addition to the requirements of a major. The certificate is awarded upon graduation. Alternatively, a major in Women's Studies is available through the Interdisciplinary Studies Major.

The following courses are representative of those approved for credit toward the Certificate in Women's Studies:

CFD 462. Women in the Family and Society. 5 hours.

CML 214. Introduction to Early Women Writers. 5 hours.

EPY 402. Sex Differences and Sex-Role Stereotyping. 5 hours.

HIS 330F. History of European Women. 5 hours.

HIS 415W. Women in American History and Culture. 5 hours.

PSY 310. Psychology of Women. 5 hours.

REL 365. Biblical Perspectives of Womanhood. 5 hours.

SOC 428. Sociology of Sex Roles. 5 hours.

Further information and applications for admission to the certificate program may be obtained from the advising office in New College.

COURSES OF INSTRUCTION

ANTHROPOLOGY (ANT)

Majors in anthropology must have the following courses in addition to ANT 102 (or 212H) unless specifically exempted by the department head: one course in social anthropology, one course in archaeology, one course in physical anthropology, one course in anthropological linguistics, and one course in a culture area.

All 400 and 500 courses have as a prerequisite ANT 102 or the permission of the department.

102. Introduction to Anthropology. 5 hours.

An introduction to the study of man as a cultural animal, the development of human societies from preliterate beginnings, the rise of complex social organizations with an outline study of the major cultures developed by man.

212H. Introduction to Anthropology (Honors). 5 hours.

Not open to students who have credit for ANT 102. See description of ANT 102.

Social Anthropology

253. Anthropology of Folk Medicine. 5 hours.

A contrast of folk medical beliefs and folk practitioners with formal systems of medicine and modern practitioners, with special emphasis on folk medical beliefs and practices in Georgia.

400. Anthropology of Economic Systems. 5 hours.

An anthropological description of the ways that societies from prehistoric to present times have organized themselves economically. Special attention will be given to the maintenance of cultural traditions. The roles of traditional and third world societies in the modern international economic order will also be discussed.

405. Cultural Anthropology. 5 hours.

Concepts and methods for analysis of the institutions of non-literate peoples and their comparison with modern societies.

410. Kinship and Social Organization. 5 hours.

The study of the ways and mechanisms by which individuals are organized into social groups. Topics covered are kinship, lineages,

clans, associations, tribes, and cultural groups. Recent developments in biological bases of social behavior and in social interaction studies will also be discussed.

413. Comparative Belief Systems. 5 hours.

An examination of the structural properties of preliterate belief systems and the ideological consequences of literacy.

453. (GGY) Urbanization in Developing Countries. 5 hours.

Prerequisite: ANT 400 or SOC 432 or POL 431 or GGY 358 or permission of department.

This course offers a detailed understanding of the processes of urbanization and development in the areas of the world undergoing modernization and cultural change. The city and its role are traced from pre-industrial manifestations to the modern urban centers of the eastern and western worlds.

455. Ethnohistory. 5 hours.

An examination of the methods used by anthropologists to reconstruct the history of preliterate societies from archaeological evidence, documentary evidence, and oral traditions. The ethnohistory of the South-eastern U.S. will be emphasized.

456. Applied Anthropology. 5 hours.

Prerequisite: Five hours of advanced social sciences or permission of department.

Applied anthropology is a specialized sub-discipline within the broad field of anthropology. The focus of interest is on social and cultural issues and problems that accompany technological change and modernization, especially in developing countries. Theoretical concepts and factual knowledge from all areas of anthropology are brought to bear on the social and cultural components of planned improvement programs in agriculture, health and medical services, educational systems, and community development.

Archaeology

222. Archaeology and Culture Prehistory. 5 hours.

Prerequisite: ANT 102.

Archaeology is the major source of information about the culture of human societies prior to the advent of writing. The course will survey the three major cultural-prehistory periods common throughout the world, the nomadic hunters-gatherers, early agriculturalists and pastoralists, and the beginnings of civilization, illustrating archaeological methods of analysis.

420. Field Methods in Archaeology. 5 hours.
Methods of archaeological reconnaissance, survey excavation, laboratory preparation and analysis of collected materials.

424. Laboratory Methods in Archaeology. 5 hours.

An introduction to the range of environmental, chronological, preservational, and analytical methods and techniques that are intrinsic to the accomplishment of archaeological research.

425. Old World Archaeology. 5 hours.

A survey of cultural developments in prehistory that range from the earliest evidence of man to the foundations of civilization.

426. New World Archaeology. 5 hours.

A survey of aboriginal cultural developments throughout the New World from the first arrival of man in the hemisphere during the late Pleistocene to the demise of native cultures under intensive European contact.

431. Archaeology of Eastern North America. 5 hours.

A survey of prehistoric and early historic cultural developments in the North American Plains and Eastern Woodlands.

435. African Prehistory. 5 hours.

The range of prehistoric cultural variability is examined as well as the goals, procedures, and problems of accomplishing prehistoric research in Africa.

Anthropological Linguistics

383. (LIN) Languages of the World. 5 hours.

Prerequisite: ANT (LIN) 480 or permission of department.

The classification and distribution of languages of the world and a survey of linguistic structures as exemplified by selected languages.

469. (LIN) Historical Linguistics. 5 hours.

See LIN 469.

480. (LIN) Introduction to Linguistics. 5 hours.

An introduction to structural linguistics from the standpoint of anthropology, emphasizing elementary descriptive techniques and a consideration of the relationships among language, culture, and society.

481. (LIN) Phonetics and Phonology. 5 hours.

Prerequisite: ANT(LIN) 480 or permission of department.

Phonetic transcription of various languages dictated by native and non-native speakers; understanding of the phonemic principle by

the solution of selected problems which consist of phonetically transcribed data.

482. (LIN) Linguistics: Morphology. 5 hours.

Prerequisite: ANT(LIN) 480 or permission of department.

Grammatical analysis of phonemically transcribed data from numerous languages of the world.

485. (LIN) American Indian Languages. 5 hours.

Prerequisite: ANT(LIN) 480 or permission of department.

The native languages of North America: classification, grammatical structures, and genetic affiliations.

486. (LIN) Language in Culture and Society. 5 hours.

Prerequisite: ANT(LIN) 480 or permission of department.

An introduction to the anthropological study of language in its cultural setting and in social contexts.

Physical Anthropology

207-207L. Culture and Human Biology. 5 hours. 4 hours lecture and one 1-hour lab per week.

Not open to students with credit in ANT 470.

Prerequisite: ANT 102.

An examination of the biological bases of human social and cultural behavior from the perspective of biological anthropology. Includes instruction in laboratory methods. Evolutionary history, primate behavior, and human biological diversity will be applied to understanding the interrelationship of biology, culture, and society.

307. (IDS/ZOO) Environment and Man. 5 hours.

See ZOO 307.

471. Human Origins. 5 hours.

A study of the evolutionary history of the human species through examination of the fossil record.

472. Osteology and Osteometrics I. 5 hours.

A comprehensive study of human skeletal anatomy and its relevance to taxonomic positioning of the genus *Homo* and related non-human primates. Topics include morphological variation, aging, sexing, paleopathology, paleodemography.

475. (PSY) Principles of Primate Phylogeny. 5 hours.

An introduction to the interrelationships between morphology, behavior, and systematics for students of primate behavior.

476. (PSY) Comparative Physical and Psychological Development of the Primates. 5 hours.
A consideration of species and developmental environment as they influence normal and abnormal behavioral development.

477. (PSY) Organization of Primate Social Groups. 5 hours.

The interaction of ecology, phylogeny, individual behavior, and group organization is considered in comparative perspective.

479. Human Adaptation. 5 hours.

Prerequisite: ANT 102, BIO 101-101L, 102-102L, and permission of department.

An exploration of human diversity as response to environmental stress, from both a biological and cultural perspective. Topics include: adaptation to heat, cold, altitude, malnutrition and infectious disease; the impact of Westernization and technological advancement on human biological function; and growth and development of the individual under environmental stress.

Culture Areas

310. Peoples of the World. 5 hours.

Prerequisite: ANT 102.

An introduction to the basic principles of ethnology, the historical and analytical study of primitive cultures. A number of primitive cultures will be surveyed. These will be selected to give the fullest possible coverage in terms of area, race, and culture types.

326. The Aztecs and the Maya. 5 hours.

Prerequisite: ANT 102 suggested.

The course offers a detailed understanding of two distinctive civilizations of the Americas. The Aztecs and the Maya will be traced from their farming village beginnings to the Spanish Conquest, ending with a consideration of their lasting impact on Mexican cultures. Topics covered include economy, political organization, urbanism, militarism, belief systems, art, architecture, and literature.

402. The American Indian. 5 hours.

A survey course on the cultural development of the aboriginal population of the New World.

441. Indians of the Southeastern United States. 5 hours.

The study of the cultural and social characteristics of the indigenous peoples of the southeastern United States from the time of earliest European contact to the present.

442. Afro-American Societies. 5 hours.

Comparative ethnology of New World black

populations; special attention is devoted to the cultural adaptations of black populations to various colonial and republican powers, with emphasis on Latin America and the Caribbean.

443. Indians of Mexico and Central America. 5 hours.

Comparative ethnology of the Indians of Mexico and Central America from pre-Columbian times to the present.

444. Latin America: Peoples and Institutions. 5 hours.

The study of contemporary Latin American peoples and institutions in their community setting; special attention is devoted both to the original impact of Western civilization on the indigenous Indian communities of South America, and to recent social changes incident to the introduction of modern agricultural and industrial technology.

445. Africa: Peoples and Institutions. 5 hours.

The study of peoples and institutions of Africa, south of Sahara, starting with earliest evidences of indigenous peoples; special emphasis will be placed on changes currently taking place.

446. South Asia: Peoples and Institutions. 5 hours.

Comparative ethnology of South Asia.

Other Courses

490. Special Topics in Anthropology. 5-15 hours.

A program of semi-independent study including reading and discussions of current developments in anthropology.

496H, 497H, 498H. Independent Reading and/or Projects (Honors). 5 hours each.

Affords Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for Honors students to undertake individual research in the field of his/her major or in a closely related field.

ART (ART)

Art Appreciation

300. Appreciation of the Visual Arts. 5 hours.

An understanding of painting, sculpture and architecture — both historic and contemporaneous — through illustrated lecture and

reading. Emphasis on sociological and psychological factors influencing period styles and contributing to the nature of genius. The aim is to make the student both visually sophisticated and historically informed.

401. Techniques of Art Appreciation and Criticism. 5 hours.

An inquiry into alternative modes of analyzing, interpreting and evaluating works of art; the construction of art appreciation curricula; critical technique as employed in classroom teaching strategies.

402. Aspects of Folk Culture. 5 hours.

Prerequisite: Permission of department.

An examination of the work and the creative processes of traditional folk, self-taught, and visionary visual artists; the correlation of this art to folk oral and musical culture, and to the concerns of studio and art history and criticism. Lectures, field trips, and seminar topics.

Art Education

(See also College of Education, Art Education section, for requirements for Admission to Teacher Education Program.)

305. Art and the Child. 5 hours. Five 2-hour lab periods.

The child, his/her development and needs in creative art experiences. Two and three dimensional laboratory experiences in drawing, painting, graphics, sculpture, and crafts appropriate in later use with children. Discussions, readings and field trips. (May not be used for credit by art education majors.)

513. Crafts for Teachers. 5 hours.

Prerequisite: Two senior division courses in art, permission of department.

A course in crafts for classroom teachers. Emphasis will be placed on the use of simple hand tools and materials in adapting a crafts program to children at various age levels, and in integrating this program with classroom activities.

523ABCDE. Special Problems in Art Education. 1-10 hours each, maximum 10 hours toward a degree.

Prerequisite: Permission of department.

Specific problem areas, according to individual needs, are investigated, discussed and evaluated.

A. Specific problems and experiences in teaching art.

B. To adult populations, e.g., prisoners and the aged.

C. In mental health facilities.

D. With handicapped children.

E. In community recreation and day-care centers.

536. The Teaching of Art in the Secondary School. 5 hours. Five 2-hour periods per week. Prerequisite: Two senior division courses in art.

For advanced students in art education and administration of secondary school programs. Recommended practices in qualitative curriculum planning, together with laboratory projects that identify the unique problems in secondary school art, including philosophical, motivational and evaluative aspects.

540. The Teaching of Art in the Elementary School. 5 hours. Five 2-hour periods.

Prerequisite: Two senior division courses in art.

For advanced students in art education and administration of elementary school programs. Recommended practices in qualitative curriculum planning, together with laboratory experiences that identify the unique problems in elementary school art including philosophical, motivational and evaluative aspects.

541. History of Art Education. 5 hours.

Prerequisite: Two senior division courses in art or art education.

The development of art educational theory and practice in the institutional setting of American schools, beginning with the industrial arts and drawing instruction initiated in the Massachusetts schools in the 19th Century; the theories of Arther Wesley Dow, Walter Smith, Royal Bailey Farnum, Norman C. Meier, John Dewey, Viktor Lowenfeld, Thomas Munro and others. European figures such as Franz Cizek, Herbert Read, Walter Gropius and L. Moholy-Nagy will also be considered.

Art History

Art history courses numbered 300 or above have prerequisite of two courses from ART 287, 288 or 289 or permission of department.

211H. History of the Visual Arts as Related to Man (Honors). 5 hours.

Not open to students with credit for ART 287.

An Honors course substitute for ART 287; an in-depth survey of world art from prehistoric through medieval times. The formal characteristics of the painting, sculpture, architecture, and some of the minor arts will be analyzed in their stylistic and symbolic developments which will be discussed in relation to the changing backgrounds.

287. Introduction to the History of Ancient and Medieval Art. 5 hours.

A survey of world art from prehistoric through medieval times. The formal characteristics of the paintings, sculpture, architecture, and some of the minor arts will be analyzed in their stylistic and symbolic developments which will be discussed in relation to the changing cultural backgrounds.

288. Introduction to the History of Art, Renaissance–18th Century. 5 hours.

A survey of world art from the Renaissance through the 18th Century. The formal characteristics of the painting, sculpture, architecture, and some of the minor arts will be analyzed in their stylistic and symbolic developments which will be discussed in relation to the changing cultural backgrounds.

289. Introduction to 19th and 20th Century Art. 5 hours.

A survey of art from the late 18th Century to the present. The formal characteristics of painting, sculpture, architecture and some of the minor arts will be discussed in relation to the changing cultural backgrounds.

450. Guided Foreign Study in Art History. 5 hours.

Prerequisite: ART 287 and 288 or comparable background and permission of department.

A systematic, on-the-spot study of a selected and logically unified group of art works found in foreign collections, sites, and museums. The range of study will be determined by the instructor and basically be within the field of the visual arts. Where possible, local library and archival resources will be used. Lecture and discussions before and during the period of travel will coordinate the activities and bring in factors of local environmental influence.

451. Guided Foreign Study in Art History. 5 hours.

Prerequisite: ART 287 and 288 or comparable background and permission of department.
A continuation of ART 450.

465. Renaissance Architecture. 5 hours.

A survey of the “new” architecture of the 15th and 16th Centuries, emphasizing such bases of the style as general principles, revival of classical forms, and individual contributions. Italian works by such masters as Brunelleschi, Alberti, Bramante, Michelangelo and Palladio will be discussed.

466. Architecture and Decoration in 18th-Century France and England. 5 hours.

A study of the various styles of architecture

and interior decoration in the two leading 18th-Century centers. Discussion will revolve around changing concepts of form, expanding sources of inspiration, reaction against tradition, and theoretical re-evaluation of design. Topics to be considered are the Rococo, Neoclassicism, the Gothic and Greek revivals, and the Chinese vogue.

467. Rococo Art. 5 hours.

This course will survey the great flowering of the figurative arts during the 18th Century in France, England and Italy. The arts of painting and sculpture will be examined within the context of those social, economic and political forces that molded their development, and also with reference to contemporary movements in literature, music and the theatre.

472. Venetian Art. 5 hours.

A concentrated study of such great artists as Giovanni Bellini, Titian, Tintoretto, Veronese, on the architecture of Palladio, and on great Venetian buildings such as St. Mark's and the Ducal Palace. All of these are examined in terms of the individual creativity of the artist, and within the context of social, cultural and economic forces that condition his/her development.

473. The Classical Tradition in the Visual Arts. 5 hours.

A discussion of classic examples of stylistic evolution. Topics vary from year to year: aspects of the development of classic and Gothic stone carving; classic and Renaissance drawing; Phidias, Raphael, and Poussin.

474. Art of the Bronze Age. 5 hours.

A study of the art of the Bronze Age in Mesopotamia, Egypt, Crete and Mainland Greece. Sculpture, wall-painting and monumental architecture from these contemporary cultures will be examined, along with possible influences of one culture on another.

475. Early Greek Art. 5 hours.

A study of stylistic and thematic developments in the major media of early Greek art from the protogeometric through the archaic periods (1050–480 B.C.). Representative examples of free-standing sculpture, architecture and architectural sculpture, and vase-painting will be examined.

476. Classical and Hellenistic Greek Art. 5 hours.

A study of the masterpieces and major monuments of Greek art from the Classical and Hellenistic periods. Both original works and Roman copies of famous original sculptures

and paintings will be presented, as well as major monuments such as the Parthenon and the Greek Altar of Zeus at Pergamon.

477. Roman Art and Architecture. 5 hours.

A study of the art and architecture of the late Roman Republican era and the Roman empire (ca. 100 B.C.-330 A.D.). Portraiture, relief sculpture and wall-painting will be investigated, along with major architectural structures at Pompeii and Rome.

479. Monuments and Styles of Western Art. 5 hours.

The geography of art. After a preliminary review of historical styles, the course (lecture and discussion) compares such geographical traditions as North and South in European art; the psychology of European "countries" such as French, Netherlandish, Italian; the contrast of modern Europe and America; the perennial contrast of worldwide East and West.

480. Art of the Italian Renaissance. 5 hours.

A study of the major arts of the Renaissance Period with emphasis on painting and sculpture.

481. History of Northern Renaissance Art. 5 hours.

Historical study of the architecture, sculpture, painting and minor arts north of the Alps from the waning of the medieval period to around the beginning of the 17th Century. The artistic achievements in France, Germany, England, and the Low Countries will be presented against the background of their political, social and literary accomplishments.

482. Backgrounds of Modern Art, 19th Century. 5 hours.

A study of the cultural and historical roots of modern architecture, painting and sculpture as they are found in Europe during the 19th Century. Particular attention is given to the relationship of the arts to their political, social, and economic contexts. Some consideration will be given to parallel developments in the arts of the United States.

483. Modern Art, 20th Century. 5 hours.

A study of the history of 20th-Century European architecture, painting, and sculpture. Particular attention is given to the relationship of the arts to their political, social and economic contexts. Some consideration will be given to parallel developments in the arts of the United States.

485A. The Art of the Baroque in Italy, Spain and France. 5 hours.

An analysis, beginning with the 17th Century

in France, Italy and Spain, detailing the rise of the Baroque and its development.

485B. The Art of the Baroque in Holland, Belgium and England. 5 hours.

Intensive investigation of the art of northern Europe, concentrating on such major artists as Rubens, Rembrandt, Vermeer, and Van Dyck, while relating the art of the period to the political, philosophical and literary environment.

485C. Baroque Architecture. 5 hours.

Development of architecture and decoration in the 17th and 18th Centuries. Relations with sculpture, gardening, city planning and other baroque forms will be considered.

485D. Baroque Art Theory. 5 hours.

A conceptual approach to 17th and early 18th-Century art. The course deals with attempts by writers in the Baroque age to define the role of the artist, the sources of creativity, and the purposes of art. It also examines the efforts of major theorists of our own day to formulate a concept of the Baroque that is meaningful in terms of style analysis and aesthetics.

488A. Art and Architecture of Ancient Peru. 5 hours.

A study of the art and architecture of the major pre-Columbian Peruvian cultures, including Chavin, Paracas, Nasca, Moche, Huari-Tiahuanaco, Chimú, and Inca.

488B. Art and Architecture of Ancient Mesoamerica. 5 hours.

A study of the art and architecture of the major pre-Columbian Mesoamerican cultures, including the Olmec, the Maya, Teotihuacan, Monte Alban, Veracruz, the Mixtecs, and the Aztecs.

489. Post-Columbian Latin American Art. 5 hours.

A study of the unique product resulting from the combination of Western culture with native arts in Latin America from the 15th Century to the present.

490. Objectives of 20th-Century Art. 5 hours.

A consideration of painting and sculpture today against its historical background, with the purpose of illustrating the links between characteristic contemporary expressions and the work of the past accepted as belonging to the central Western tradition. A reading seminar related to lectures.

493A. Early Christian and Byzantine Art. 5 hours.

An analysis of the origins and the rise of early

Christian architecture and art in the Mediterranean countries and of the beginnings of Christian art in the north.

493B. Early Medieval Art. 5 hours.

A study of the architecture, painting and sculpture from the Carolingian to the Romanesque periods with emphasis on the Romanesque architectural ensembles.

493C. Gothic Art. 5 hours.

A study of Gothic architecture and art beginning with the developments of early Gothic architecture and sculpture in the 12th Century and ending with the international Gothic of the late 14th Century. Special emphasis will be given to the architecture and sculpture of the important French cathedrals.

498. Arts of the United States Before 1865. 5 hours.

A study of the arts of the area of the United States beginning with that of the American Indians and continuing with the architecture, sculpture, painting and minor arts from colonial times until 1865. Particular attention is given to the sources for these arts and their relationship to the physical and social situation.

499. Arts of the United States, 1865–Present. 5 hours.

A study of the arts of the United States from 1865 through the periods of industrialization and international political and economic leadership. Stress is given the evolving role of American cultural characteristics found in architecture, sculpture, painting and minor arts (particularly industrial design), their present-day manifestations and significance.

Basic Design and Drawing

120. Art Structure. 5 hours. Four 2-hour periods and one audio-visual lecture seminar. Based on perceptual orientation in which students are made aware of and taught to respond to controlled visual stimuli. Slides, films, TV monitor, cameras and other contemporary devices are employed. Studio work revolves around a series of two-dimensional problems utilizing a variety of materials and appropriate techniques.

130. Art Structure. 5 hours. Five 2-hour periods including lectures.

Prerequisite: ART 120.

Continuation of the philosophy and intent of ART 120 with emphasis on the drawing experiences and skills required to produce three-dimensional images. Setups with the human figure, still lifes, and landscapes are employed

to expand the attention and concerns of students. Studio work concentrates on flat surfaces and a wide range of media and techniques.

230. Art Structure. 5 hours. Five 2-hour periods including lectures.

Prerequisite: ART 120 and 130.

Exploration in design in which a variety of color considerations are predominant. Two methods of approach are used: the traditional painterly involvement, and the colorlight application used in color reproduction techniques.

240. Art Structure. 5 hours. Five 2-hour periods.

Problems with emphasis on the elements of visual organization in modular and sculptural approaches. Experiences in the manipulation of three-dimensional materials such as wood, paper, metal and synthetics.

Art studio courses numbered 300 or above have prerequisites of ART 120, 130, 230, and 240 or equivalent.

Crafts

252. Jewelry and Metalwork. 5 hours. Five 2-hour periods.

Fundamentals of working with such materials as sterling, gold, copper, and iron. Guidance in the techniques necessary for executing well-designed objects: forging, raising, casting, fabrication and finishing.

260. Ceramics. 5 hours. Five 2-hour periods.

Form, proportion, and simple ornament as related to pottery shapes. Laboratory exercises and related lectures in hand-building pottery. Studio and lecture work in hand building of pottery; experience in glazing and firing.

350A. Fabric Design-Structure. 5 hours. Five 2-hour periods.

Fundamentals of woven and non-woven fabric structure. Study of the relationship between process and material.

350B. Fabric Design-Structure. 5 hours. Five 2-hour periods.

Prerequisite: ART 350A.

Woven structure investigated through manipulation of the hand loom. Study of the basic weaves and their application to hand-crafted and industrial textiles.

350C. Fabric Design-Structure. 5 hours. Five 2-hour periods.

Prerequisite: ART 350B.

Study of fibers and other materials as related to fabric structure and end use.

350D. Fabric Design-Structure. 5 hours. Five 2-hour periods.

Prerequisite: ART 350C.

Theory of woven structure including studio work on simple and multi-harness looms. Field trips and special problems.

351A. Fabric Design-Decoration. 5 hours. Five 2-hour periods.

Fundamentals of fabric decoration including work in flat pattern design and decoration techniques with dyes and pigments.

351B. Fabric Design-Decoration. 5 hours. Five 2-hour periods.

Prerequisite: ART 351A.

Screen process method of fabric printing, dye technology, stencil making and application processes.

351C. Fabric Design-Decoration. 5 hours. Five 2-hour periods.

Prerequisite: ART 351B.

Photographic and other commercial screen process printing techniques. Study of relationship of other decoration processes to screen printing. Field trips and special problems.

353ABC. Jewelry. 5 hours each; taken in sequence. Five 2-hour periods.

Prerequisite: ART 252.

Extensive study of traditional and contemporary forms, materials and techniques. Investigation of ornamentation and adornment as it applies to jewelry. Experimentation with surface enrichment techniques.

354ABC. Metalwork. 5 hours each; taken in sequence. Five 2-hour periods.

Prerequisite: ART 353.

Extensive study of forging and raising techniques involved in creating hollow ware, flat ware, and architectural ornaments. Experimentation with surface enrichment techniques.

361ABCD. Ceramics. 5 hours each; taken in sequence. Five 2-hour periods.

Prerequisite: ART 260.

Studio experience, lectures, and outside study related to the designing and executing of forms in clay. Emphasis on the development of individual style by student through study of ceramics of past civilizations, ceramic technology, and concentrated studio work.

366ABCD. Ceramics. 5 hours each. Five 2-hour periods.

Prerequisite: ART 361C.

For advanced students who have sufficient

background and technical knowledge in ceramics to carry on independent projects. Problems combining research in design and technology are selected in consultation with the instructor.

548. History of Fabric Art. 5 hours.

Study of the historical development of the fabric arts from the prehistoric period to the present.

549. Fabric Design. 5 hours. Five 2-hour periods.

Prerequisite: ART 350A.

Investigation of non-woven structures (looping, coiling, crochet, etc.) and utilization of their unique potentials.

550AB. Fabric Design-Structure. 5 hours each. Five 2-hour periods.

Prerequisite: Two senior division fabric design courses and permission of department.

Problems in fabric structure for advanced students in fabric design who are able to carry on independent study. Research problems combining process with design in consultation with the instructor.

551AB. Advanced Fabric Design. 5 hours each. Five 2-hour periods.

Prerequisite: Two senior division courses in fabric design, and permission of department. Problems in fabric design decoration for advanced students in fabric design who are able to carry on independent study. Research problems combining dye, fiber and application technology with design and function or selection in consultation with the instructor.

552. Jewelry and Metalwork. 5 hours.

Prerequisite: Two senior division courses in jewelry or metalwork, and permission of department.

An investigation into the properties of various metals and how those properties relate to processes and function of form and aesthetics.

553AB. Jewelry. 5 hours each; taken in sequence. Five 2-hour periods.

Prerequisite: Two senior division art courses and permission of department.

An advanced study of jewelry making processes and development of individual interpretations of those processes and products.

554AB. Metalwork. 5 hours. Five 2-hour periods.

Prerequisite: Two senior division art courses and permission of department.

Problems in design, forming and constructing of various metals including copper, silver and gold. Independent study and emphasis on

research is employed for solutions to design problems. The examination of the uniqueness of metal as a material is aimed in both functional and sculptural directions.

Drawing and Painting

321. Drawing. 5 hours. Five 2-hour periods.

Prerequisite: ART 120, 130, 230, and 240.

Varied approaches to drawing: experience with model, still life, and landscape. Introduction to basic drawing tools and media.

322. Figure Drawing and Anatomy. 5 hours. Five 2-hour periods.

Prerequisite: ART 321.

Figure structure and composition through work with nude and clothed model. Emphasis on human anatomy through lectures and studio work.

323A. Advanced Drawing. 5 hours. Five 2-hour periods.

Prerequisite: ART 322.

Advanced level drawing. Special projects and experimental research encouraged.

323B. Drawing — Independent Study. 5 hours.

Prerequisite: ART 323A and permission of department.

Available only as advanced independent study for drawing and painting majors. Studio meetings arranged.

323C. Drawing — Advanced Independent Study. 5 hours.

Prerequisite: Permission of department.

Available only as advanced independent study for drawing and painting majors. Studio meetings arranged.

331. Introductory Painting. 5 hours. Five 2-hour periods.

Prerequisite: ART 130 and 230.

Technical fundamentals. Emphasis on esthetic understanding derived from subject matter. Consideration of composition, color, and pictorial organization. Required as prerequisite for all other painting courses.

332. Figure Painting. 5 hours. Five 2-hour periods.

Prerequisite: ART 331.

Concentration on the human figure, both nude and clothed. Emphasis on figure structure and composition.

333. Painting Studio. 5 hours. Five 2-hour periods.

Prerequisite: ART 331.

Open inquiry into varied approaches in painting, both representational and non-representational. Experimental attitudes and personal solutions are encouraged.

336. Painting Materials and Techniques. 5 hours.

Prerequisite: ART 331; permission of department.

A studio-workshop introduction to such traditional techniques as egg tempera, fresco, encaustic, and Venetian oil painting, as they apply to contemporary needs; modern materials such as alkyd and polymer resins will be introduced. The properties of pigments, binders, grounds, and supports will be considered.

337. Painting — Independent Study. 5 hours.

Prerequisite: ART 331 and at least 3 other painting courses.

Available only as advanced independent study for drawing and painting majors. Studio meetings arranged.

338. Painting — Advanced Independent Study. 5 hours.

Prerequisite: ART 337 or permission of department.

Available only as advance independent study for drawing and painting majors. Studio meetings arranged.

341. Transparent Watercolor. 5 hours. Five 2-hour periods.

Prerequisite: ART 331 or permission of Drawing and Painting Area.

Traditional and contemporary approaches to transparent watercolor. Work from the landscape, still life, and figure. Personal imagery and non-representational ideas will also be explored.

342. Aqueous Media. 5 hours. Five 2-hour periods.

Prerequisite: ART 331.

Work in opaque watercolor, acrylics, casein, and water media other than transparent watercolor.

349. Advanced Painting. 5 hours. Five 2-hour periods.

Prerequisite: ART 331 and at least three other painting courses.

Advanced work in painting. To be taken the final quarter of student's undergraduate work in painting. Group critiques and preparation for senior exit exhibition.

Graphic Design

306A. Lettering. 5 hours. Five 2-hour periods.

Principles of lettering and letter construction with experience in lettering as used and reproduced today. Study of typography in relation to lettering and design.

307A. Graphic Design I-A. 5 hours. Five 2-hour periods.

An introduction to the use of various drawing instruments, techniques and graphic media including technical and perspective drawings.

307B. Graphic Design I-B. 5 hours. Five 2-hour periods.

Prerequisite: ART 306A and 307A.

A continued investigation of graphic tools and materials with concentration in drawing and painting techniques.

308A. Graphic Design II. 5 hours. Five 2-hour periods.

Prerequisite: ART 307B.

A study of the photo-mechanical reproduction processes including the preparation of layouts, comprehensive and finished art as well as mechanicals and photo-proofing processes.

308B. Graphic Design III. 5 hours. Five 2-hour periods.

Prerequisite: ART 308A.

Fundamentals of layout using color, design, typography and reproduction related to modern communication problems.

308C. Graphic Design IV. 5 hours. Five 2-hour periods.

Prerequisite: ART 308A.

Graphic techniques applied to architectural, environmental, and informational design.

309A. Advanced Lettering and Typography. 5 hours. Five 2-hour periods.

Prerequisite: ART 306A and 308A.

Creative manipulation of lettering, typography, plastic patterns and technical processes integrated toward functional communication.

310A. Illustration. 5 hours. Five 2-hour periods.

Prerequisite: ART 308C.

Research in and experimentation with drawing, painting and other visual media and techniques applicable to illustration.

310B. Advanced Illustration. 5 hours. Five 2-hour periods.

Prerequisite: ART 310A.

A continued exploration of illustrative media and the development of personal illustrative directions.

311. Three-Dimensional Graphic Design. 5 hours. Five 2-hour periods.

Prerequisite: ART 308A.

Comprehensive problems in graphic design applied to three-dimensional media. Emphasis will be placed on the development, structural

and communicative processes as applied to environmental terms.

312. Special Problems in Graphic Design. 5 hours. Five 2-hour periods.

Prerequisite: ART 308BC, and one from ART 309, 310, or 311.

Advanced research into graphic design media and techniques and their application to a comprehensive visual communication project.

Interior Design

386A. History of Interior Design. 5 hours.

Prerequisite: Permission of department.

An historical survey of architecture, concepts of interior space, the great periods of furniture design and allied crafts, as a background for comparison with contemporary architecture, furniture, new materials, methods of manufacture, and present-day needs.

386B. Residential Interior Design. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: Permission of department.

Introduction to drafting principles and practices, including perspective; learning the symbolic language of structural design; measuring and scaling interior spaces and furnishings; residential space planning.

387A. Decorative Materials in Interior Design. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386B.

Decorative materials and color as applied to interior design. Studio problems in color, light, paint, wall paper, soft floor coverings, woods and wood finishes, fabrics; design and construction; fabric uses and curtain design and construction.

387B. Furniture Design and Detailing. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386B.

Creative problems in cabinet and furniture design. The study of construction methods, sectional, isometric and oblique views; details, perspectives, and complete shop drawings.

387C. Contract Lighting Design. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386B or permission of department.

Commercial lighting design, aesthetics of color and light controls; light sources, luminaries; influences on heating, ventilating and air conditioning; calculations; design theory; graphic symbols and professional design applications.

388A. Architectural Design and Construction. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386B or permission of department.

Architectural materials and construction as related to interior design. Wall and floor construction systems and materials; wood, stone, brick, concrete block, tile, flooring materials, graphics and lighting. A study of their use and design possibilities and presentations through drafting and perspective.

388B. Delineation for Interior Design. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386B or permission of department.

The examination and application of black and white and color delineation as applied to the professional presentation of interior space including elevations and perspectives. Emphasis on layout, composition and a variety of contemporary media.

391. Contract Interior Design. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386AB, 387ABC and 388AB. Comprehensive senior design problems. Commercial, institutional, environmental space problems. Emphasis on total design concept for client presentation with plans, specifications, graphics, lighting design, material samples and perspective presentation.

392. Business Procedures in Interior Design. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386AB, 387ABC and 388AB. Application of professional design procedures and ethical practices in interior design execution. Design problems, design sources and field trips to wholesale trade showrooms.

394. Interior Design Internship. 5 hours.

Prerequisite: 30 hours of interior design courses, permission of department and the firm where interning.

Minimum 10 hours per week for each week in the quarter enrolled, working in an established interior design or architectural firm or trade showroom. Opportunity to work in the professional field before graduation. An introduction to as many practical applications of design theory as possible within the selected firm.

Photographic Design

320ABC. Photographic Design I, II, III. 5 hours each; taken in sequence. Five 2-hour periods each.

Creative design through the use of photography. An investigation of the potential of the light sensitive medium.

335AB. Photographic Design IV, V. 5 hours each; taken in sequence. Five 2-hour periods each.

Prerequisite: ART 320C.

Problems in advanced photographic design including extensive studio and darkroom work.

Printmaking

324A. Printmaking: Screen Printing I. 5 hours. Five 2-hour periods.

An introductory examination of various printmaking techniques with concentrated work in screen printing.

324B. Printmaking: Screen Printing II. 5 hours. Five 2-hour periods.

Prerequisite: ART 324A.

Individual screen printing projects stressing esthetic development on the advanced level.

325A. Printmaking: Intaglio I. 5 hours. Five 2-hour periods.

An introductory examination of various printmaking techniques with concentrated work in intaglio.

325B. Printmaking: Intaglio II. 5 hours. Five 2-hour periods.

Prerequisite: ART 325A.

Individual projects in the intaglio processes stressing esthetic development on the advanced level.

326A. Printmaking: Lithography I. 5 hours. Five 2-hour periods.

An introductory examination of various printmaking techniques with concentrated work in lithography.

326B. Printmaking: Lithography II. 5 hours. Five 2-hour periods.

Prerequisite: ART 326A.

Individual projects in lithography stressing esthetic development on the advanced level.

327A. Printmaking: Relief Processes I. 5 hours. Five 2-hour periods.

An introductory examination of relief printmaking techniques with concentrated work in the processes of wood cut, wood engraving, and linoleum cut.

Sculpture

370. Sculpture. 5 hours. Five 2-hour periods.

A beginning course in sculpture. Basic forms are explored through a series of problems employing carving, modeling and constructive methods.

371. Sculpture. 5 hours per quarter; maximum of 15 hours. Five 2-hour periods. Course will provide structured, direct model sculptural experiences in both portrait and figure composition. Repeat students will be expected to build on previous experience.

372ABC. Sculpture-Materials I, II, III. 5 hours each. Five 2-hour periods.

Prerequisite: ART 370 or 371.

The A course covers beginning welding techniques and the use of metal in sculpture composition. The B course continues with wood and stone carving, and the C course works with cement and plastic casting and plaster and clay modeling.

373ABC. Sculpture-Casting I, II, III. 5 hours each. Five 2-hour periods.

Prerequisite: ART 370 or 371.

Introduction to methods of producing metal sculpture. The production of sculpture in refractory molds and sand casting will constitute the major emphasis of this course.

Technical Problems

301. Technical Problems. 5 hours. Five 2-hour periods.

A special course for students qualified to carry out individual projects in studio areas. Work is done independently of the regularly scheduled classes. Scheduling of this course must be approved by the head of the Department of Art.

302. Technical Problems. 5 hours. Five 2-hour periods.

Continuation of ART 301.

Honors Program

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

ARTS AND LITERATURE (ARL)

411H, 412H, 413H. Special Problems Seminar in Arts and Literature (Honors). 1-5 hours each. Provides investigation and study of selected problems in the area of arts and literature

which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.

BIOCHEMISTRY (BCH)

Biochemistry majors in the College of Arts and Sciences should take the following courses: BCH(BIO) 310, BCH 401, 402, and 403, plus other courses in mathematics, physics, organic chemistry, physical chemistry, and biology, as determined in consultation with the departmental advisor.

310. (BIO) Introductory Biochemistry. 5 hours. Prerequisite: CHM 240 and 240L or equivalent.

A survey of the chemistry, isolation, physical properties, structures and important reactions of biological molecules to include energetics, enzymology, metabolic pathways plus carbon and nitrogen utilization. In-depth "mini-courses" consider topics of special interest during the last portion of the course.

399. Independent Study. 1-5 hours per quarter; maximum of 15 hours.

Prerequisite: BCH(BIO) 310 and permission of department.

A course designed to give the advanced student the opportunity to conduct independent study and research under the direction of individual staff members.

401. Intermediate Biochemistry. 5 hours.

Prerequisite: BCH(BIO) 310 or permission of department.

An intermediate-level course in general biochemistry which stresses the physical and chemical properties of biological molecules. This course will not serve as a prerequisite for advanced subject matter specialty courses in biochemistry (ex. BCH 806, Enzymology).

402. Intermediate Biochemistry. 5 hours.

Prerequisite: BCH 401.

An intermediate-level course in general biochemistry which stresses intermediary metabolism. This course will not serve as a prerequisite for advanced subject matter specialty courses in biochemistry (ex. BCH 806, Enzymology).

403. Laboratory Techniques in Biochemistry. 5 hours. One lecture and four 3-hour lab periods.

Prerequisite: BCH(BIO) 310 or BCH 401. (May be taken concurrently with BCH 401 with permission of department.)

A course designed to acquaint the student with basic techniques in biochemistry to in-

clude enzyme assay and purification, nucleic acid purification and characterization, chromatography, spectrophotometry, and other modern techniques.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for Honors students to undertake individual research in the field of their majors or in a closely related field.

BIOLOGY (BIO)

Biology majors in the College of Arts and Sciences should take the following courses: BIO 111-111L and 112-112L (recommended) or 101-101L and 102-102L plus BCH(BIO) 310, BIO(MPG) 320; BIO 330 or 340; 350 or 360 and one course from among BIO (MPG) 321, BIO 331, 351 or BCH 403 plus other courses in biology, chemistry, physics and mathematics as determined in consultation with a biology degree advisor. It is important to complete the inorganic and organic chemistry sequences as soon as possible, preferably by the end of the sophomore year.

101-101L. Principles of Biology. 5 hours. Four lectures and one 3-hour lab.

Cell structure, genetics, chemistry, development and evolution of prokaryotic and eukaryotic organisms.

102-102L. Principles of Biology. 5 hours. Four lectures and one 3-hour lab.

Prerequisite: BIO 101-101L.

Phylogeny and evolution of animals and plants, animal and plant development, bioenergetics, structure and function of major plant and animal systems, photosynthesis, behavior, and ecology.

105. Biology for Elementary Teachers, an Ecological Approach. 5 hours. Three lectures and two 2-hour labs.

Materials and methods currently used in the biological area of elementary science teaching are integrated into a study of the fundamental concepts of biology with primary emphasis on the organism in its environment. Restricted to students majoring in elementary education.

106. Biology for Elementary Teachers, a Cultural Approach. 5 hours. Three lectures and two 2-hour labs.

(This course is independent of BIO 105.) An introduction to the unifying concepts and information of the biological sciences taught with materials appropriate to elementary school teaching. Emphasis is placed upon the significance of biology in terms of its social and cultural implications, including the impact of biology on human behavior, nutrition, drug use, health and medicine, population problems, eugenics, exploitation of the environment, and decision making. Restricted to students majoring in elementary education.

111-111L. Introductory Biology for Science Majors. 5 hours. Four lectures and one 3-hour lab.

Prerequisite: CHM 121 and 121L or 137 and 137L.

An introduction to basic life processes in prokaryotic and eukaryotic cells with emphasis on the organism. Laboratory sessions stress the experimental approach to biological knowledge. This course and BIO 112-112L are the recommended sequence for all B.S. degree candidates in the Life Sciences. (Fall and Winter quarters.)

111H. Introductory Biology for Science Majors (Honors). 5 hours. Four lectures and one 3-hour lab.

Not open to students with credit for BIO 101-101L or 111-111L.

Prerequisite: CHM 121 and 121L or 137 and 137L and permission of the Honors Program. See description for BIO 111-111L.

112-112L. Introductory Biology for Science Majors. 5 hours. Four lectures and one 3-hour lab.

Prerequisite: BIO 111-111L.

Evolutionary strategies and integrative functions in eukaryotes with emphasis on organs and organisms. Laboratory sessions stress the experimental approach to biological knowledge. (Winter and Spring quarters.)

112H. Introductory Biology for Science Majors (Honors). 5 hours. Four lectures and one 3-hour lab.

Not open to students with credit for BIO 102-102L or 112-112L. Prerequisite: BIO 111-111L or 111H and permission of the Honors Program.

See description for BIO 112-112L.

250. General Ecology. 5 hours.

Not open to students with credit for BIO 350. Prerequisite: BIO 102-102L.

A general ecology course for non-biological science majors. The course will cover topics dealing with the nature of the environment, population growth and regulation, community structure, classification and global distribution, energy flow and mineral cycling in ecosystems. The effects of man will be included in most of these topics.

303-303L. Organismal Biology. 5 hours.

Prerequisite: BIO 102-102L.

A survey of diversity in the five kingdoms of living organisms. Emphasis will be on studying and handling organisms and preparing students in modern biology to choose organisms for further study. Life cycles, morphology and organismal differentiation with respect to function will be treated.

310. (BCH) Introductory Biochemistry. 5 hours.

See BCH 310.

320. (MPG) Genetics. 5 hours.

Prerequisite: BIO 102-102L; organic chemistry; BIO (BCH) 310 is strongly recommended.

An integrated and comprehensive treatment which deals with genetic mechanisms in viruses, bacteria and eukaryotic cells in a comparative sense. Topics include molecular genetics and gene action, transfer systems and mapping, cytological, quantitative and population aspects.

321. (MPG) Experimental Genetics. 5 hours. Three 3-hour lab periods.

Prerequisite or corequisite: BIO(MPG) 320.

A laboratory course in genetics utilizing *Drosophila*, bacteria, phage and fungal systems for the analysis of mutation, transfer systems, mapping, complementation, population studies, and other genetic principles. (Winter quarter.)

330. Developmental Biology. 5 hours.

Prerequisite: BIO 102-102L; organic chemistry; (BIO (BCH) 310 and/or BIO(MPG) 320 are recommended).

Cell differentiation and morphogenesis of animals, plants and prokaryotes. Topics include: gene regulation at the molecular level, gametogenesis, fertilization, normal embryonic development, cell and tissue interactions, hormonal regulation, and the developmental aspects of cancer and the immune response. (Winter and Spring quarters.)

331. Laboratory in Cellular and Developmental Biology. 5 hours. Three 3-hour lab periods.

Prerequisite: BIO 102-102L and 330 or 340, and CHM 240 and 240L.

A laboratory course on the basic techniques

for investigating properties of cells and differentiating systems. Experiments will be performed on the isolation and characterization of cell components, on induction of enzymes, and on developing embryos. Demonstrations of important techniques such as analytical ultracentrifugation, autoradiography and electron microscopy will be included. (Spring quarter.)

340. Cell Biology. 5 hours.

Prerequisite: BIO 102-102L and BIO(BCH) 310.

An integrated approach to the structure and function of cells. Topics include: cell architecture, the cell cycle nucleic acid and protein syntheses, membrane phenomena, organellogenesis, energy transductions and cellular control mechanisms.

350. Ecology. 5 hours. Four lectures and one discussion.

Not open to students with credit for BIO 250.

Prerequisite: BIO 102-102L.

A first course in the science of biotic populations and communities. The course covers population structure and dynamics, organization and classification of communities, nutrient and energy flows in ecosystems, and the principles of systems ecology. (Fall and Winter quarters.)

351. Ecology Laboratory. 5 hours. Three 3-hour lab periods.

Prerequisite: BIO 350 or permission of department.

A laboratory course designed to illustrate the principles developed in BIO 350. Particular emphasis will be placed on structure, function and control mechanisms at the community ecosystem level of organization. (Spring quarter.)

360. Evolutionary Biology. 5 hours.

Prerequisite: BIO 102-102L.

An introduction to the processes of evolution. Topics include: population genetics, speciation, systematics, coevolution, chemical origin of life, history of life, geological record and evolution of man. (Winter quarter.)

370. Animal Behavior. 5 hours.

Prerequisite: BIO 102-102L or PSY 101.

An evolutionary approach to the principles of animal behavior emphasizing social organization, animal communication, and the genetic, developmental and physiological bases of behavior. (Winter quarter.)

371. Laboratory in Neurobiology and Behavior. 5 hours.

Prerequisite: BIO 370 or 380 or permission of department.

A laboratory course providing practice in the methods and techniques used in a broad range of neurobiological and behavioral research. Firsthand experience with a variety of living animals in both laboratory and field illustrates principles developed in BIO 370 and 380.

380. Neurobiology. 5 hours.

Prerequisite: BIO 102-102L or PSY 101.

An introduction to the structural organization and basic physiology of the nervous system. Emphasis is placed on the mechanisms of neural integration required to describe the model systems of motivation, locomotion, perception, and learning. The social and philosophical implications of mind-brain research are discussed. (Spring quarter.)

390. Readings in Biology. 1-5 hours.

Prerequisite: Permission of department.

Small student groups will meet weekly with a faculty member to discuss readings in selected areas of biology. Much of the reading is from scientific journals. A list of topics and instructors is available in the division office before preregistration each term. Contact the individual instructor before registering.

399. Georgia Intern Program. 5-15 hours.

Prerequisite: Upper division standing, permission of major advisor.

Participation in the activities of a state, county or municipal agency or government office under the direction of a faculty member. The project shall be related to at least one of the academic disciplines of the division.

456. (PSY) Sensory Systems. 5 hours.

See PSY 456.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of upper division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

501. Theory of Electron Microscopy. 3 hours. Three lectures.

Prerequisite: BIO 102-102L or equivalent, 3 quarters of Introductory Chemistry, 3 quarters of Introductory Physics, and/or permission of department.

Instrument theory and theory of specimen preparation with emphasis on transmission

electron microscopy. Fundamentals of scanning electron microscopy.

503. (VAR) Electron Microscopy Laboratory. 2 hours. Two 3-hour lab periods.

Corequisite: BIO 501.

Preparation and examination of specimens using ultramicrotomy, metal shadowing and other basic methods for preparing specimens primarily for transmission electron microscopy. Limited introduction to techniques used in scanning electron microscopy.

BOTANY (BOT)

A botany major in either the College of Arts and Sciences or the College of Agriculture is required to take the following courses: BIO 101-101L, 102-102L or BIO 111-111L, 112-112L or BOT 121-121L, 122-122L; BIO(BCH) 310, BIO(MPG) 320, BIO 330 or 340 or BOT 440-440L; BIO 350 or 360; BOT 410-410L or BOT(PAT) 420-420L; BOT 423-423L or 431-431L; BOT 465-465L and 483-483L. MAT 254, CHM 121 and 121L, 122 and 122L, 240 and 240L, PCS 127-127L, 128-128L are also required. Additional recommended courses in botany depend on the student's specific interests. Consult the departmental undergraduate advisor for further information.

121-121L. Elementary Botany. 5 hours. Four 1-hour lecture periods and one 3-hour lab period. Not recommended for those with credit for BIO 101-101L and 102-102L.

A study of the biology of plants including cell structure and function, plant structure, growth and function and basic ecology.

122-122L. Elementary Botany. 5 hours. Four 1-hour lecture periods and one 3-hour lab period.

Prerequisite: BOT 121-121L.

A study of (a) heredity, variation, and evolution of seed plants; (b) representative members of each of the major plant groups; and (c) the relations of plants to their environment.

380-380L. Elementary Plant Physiology. 5 hours. Three 1-hour lectures and two 2-hour lab periods.

Prerequisite: BIO 102-102L or 112-112L, or BOT 121-121L and 122-122L.

A survey of physiological processes occurring in plants and conditions which affect these processes.

390ABC. Special Problems in Botany. 1-5 hours each; maximum 15 hours.

Prerequisite: Two senior division courses in

botany, permission of undergraduate advisor and department.
Independent research and research participation in selected problems.

410-410L. Biology of the Algae. 5 hours. Three lectures and two 2-hour lab periods.
Prerequisite: BIO 102-102L, 112-112L or BOT 122-122L.

Algal phylogeny, taxonomy, cytology, reproduction, and ecological relationships. Emphasis on the organismal biology of algae. Laboratories will concentrate on examination of living materials and will include methods for the isolation and culture of algae.

420-420L. (PAT) Introductory Mycology. 5 hours.

See PAT 420-420L.

423-423L. Plant Anatomy. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: BIO 102-102L or BOT 122-122L or BIO 112-112L and BIO 340 or equivalent and permission of department.

Structure and growth of meristems: development and structure of cells, tissues, and tissue systems; comparative anatomy of stems, roots, leaves, flowers, and fruits; survey of recent advances in study of growth and development of form with emphasis on experimental approaches. Assumes elementary knowledge of cell and tissue structure.

425. Biology of Secondary Plant Products. 5 hours.

Prerequisite: BOT 122-122L and CHM 241 and 241L or permission of department.

An examination of the role of secondary plant metabolites such as alkaloids, terpenes and pigments on the relationships and interactions among plants and between plants and animals.

431-431L. Morphology of the Vascular Plants. 5 hours. Three 1-hour lectures and two 2-hour lab periods.

Prerequisite: BIO 102-102L or 112-112L, or BOT 121-121L and 122-122L.

A survey of the organographic diversity in vascular plants including principles of structural organization and major evolutionary trends. Course is strongly laboratory oriented with emphasis on firsthand examination of living material.

435-435L. Biochemical Systematics. 5 hours. Three 1-hour lectures and two 2-hour labs.

Prerequisite: BOT 122-122L and CHM 240 and 240L, 241 and 241L.

Application of natural product chemistry and

biochemistry to problems in plant systematics. Laboratory will present general screening procedures for selected classes of natural products commonly used in plant systematics. (Winter quarter of even-numbered years.)

440-440L. Plant Cell Biology. 5 hours. Three 1-hour lectures, one 2-hour lab, and one 2-hour discussion section.

Prerequisite: CHM 241 and 241L, and BIO 102-102L or 112-112L or BOT 122-122L.

The study of the relationship between structure and function, from the organelle level to cell, tissue and organ interactions. The relationship between environment, structure and functions is also considered. Lab: Advanced optical and analytical techniques to examine plant cells are studied.

465-465L. Plant Taxonomy. 5 hours. Three 1-hour lectures and two 2-hour lab periods. Weekend field trips.

Prerequisite: BIO 102-102L or BOT 122-122L. History of taxonomy, nomenclature, characters, identification principles, classification, taxonomic relationships, taxonomic literature, species biology, collecting and herbarium, floristic studies.

471-471L. Principles of Plant Systematics. 5 hours. Three 1-hour lectures and two 2-hour lab periods. Weekend field trips.

Prerequisite: BIO 102-102L or BOT 122-122L. Principles of systematics, principles of nomenclature, concepts of rank and taxa, characterization and description, problem design, analytical procedures, data presentation, identification of special groups, classification, phylogenetic relationships, polymorphism, literature and bibliographic aids. Labs: Morphology and arrangement of selected phylogenetically significant families; preparation of a revision of small genus or species complex.

472-472L. Variation and Evolution in Plants. 5 hours. Three 1-hour lectures and two 2-hour lab periods.

Prerequisite: BIO 102-102L or BOT 122-122L; a course in genetics or cytology would be useful but is not required.

Processes and mechanisms of variation and evolution, genotypic and phenotypic patterns, chemosystematics, adaptation, breeding systems, polyploidy, hybridization, apomixis, polymorphisms, use of evolutionary data taxonomically, literature, experimental design, population sampling. Variation analysis, breeding techniques, data presentation, population analysis, cytotoxonomic techniques, scanning electron microscopy.

473. Taxonomy of Grasses, Sedges, and Rushes. 5 hours. Two 1-hour lectures and three 2-hour lab periods. Weekend field trips.

Prerequisite: BOT 465-465L or permission of department.

Identification of grasses, sedges and rushes, systematics and economic importance of grasses, recognition of the economically important grasses of the Southeast. Labs: Morphology, identification; a collection will be required.

476. (GGY) Plant Geography. 5 hours.

Prerequisite: 15 hours credit in botany, geology, and geography, or agriculture including a course in ecology.

Theories of plant geography, climax formations, and the causes of contemporary vegetation. Includes floristics, environmental relations, system structure and function, indicator plants and problems in land utilization. Emphasis on the North American flora.

477-477L. Community Ecology. 5 hours. Three lectures and two lab periods.

Prerequisite: BIO 350 or permission of department.

The study of community structure, classification, distribution and development.

483-483L. Plant Physiology. 5 hours. Three lectures and one 3-hour lab period.

Prerequisite: BIO (BCH) 310 or equivalent.

Plant physiology for students with cell physiology or biochemistry background. Water relations, mineral nutrition, transport of materials, respiration, photosynthesis, growth and development.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

CHEMISTRY (CHM)

Majors in chemistry must meet these minimum requirements: CHM 340 and 340L, 341 and 341L, 342 and 342L, 381 and 381L, 390, 391, and 421.

The recommended sequence of chemistry courses taken by chemistry majors is CHM

121 and 121L, 122 and 122L, 123 and 123L, 280 and 280L (or 137 and 137L, 138 and 138L, 139 and 139L), 340 and 340L, 341 and 341L, 342 and 342L, 390, 391. Chemistry majors must also complete three quarters of physics (PCS 127-127L, 128-128L, 229-229L or 137-137L, 138-138L, 239-239L) and mathematics through MAT 254.

111, 112. Elementary Chemistry. 4 hours each. Not open to students with credit in chemistry. Corequisite: CHM 111L, 112L, respectively.

A non-mathematical study of chemical principles. Cannot be used toward any B.S. degree requirements in Arts and Sciences.

111L, 112L. Elementary Chemistry Laboratory. 1 hour each.

Corequisite: CHM 111, 112, respectively.

121, 122. General Chemistry. 4 hours each.

Prerequisite or corequisite for CHM 121: MAT 116 or equivalent.

Corequisite: CHM 121L, 122L, respectively.

The first course is a systematic treatment of fundamental chemical principles. The second course is a continuation of the first.

121L, 122L. General Chemistry Laboratory. 1 hour each.

Corequisite: CHM 121, 122, respectively.

123. Qualitative Analysis. 3 hours.

Prerequisite: CHM 121 and 121L, 122 and 122L.

Corequisite: CHM 123L.

The fundamental theories of qualitative analysis and analysis of common cations and anions by semi-micro methods.

123L. Qualitative Analysis Laboratory. 2 hours.

Corequisite: CHM 123.

127H, 128H, 129H. Advanced General Chemistry (Honors). 4, 4, and 3 hours, respectively.

Not open to students with credit in general chemistry.

Prerequisite: Admission based upon results of placement tests in chemistry and mathematics. See description for CHM 137, 138, 139. Registration through the Programs for Superior Students office.

127L, 128L, 129L. Advanced General Chemistry Laboratory. 1, 1, and 2 hours, respectively.

Corequisite: CHM 127H, 128H, 129H, respectively.

137, 138, 139. Advanced Modern Chemistry. 4, 4, and 3 hours, respectively.

Not open to students with credit in general chemistry.

Prerequisite for 137: Placement tests in chemistry and mathematics.

Corequisite for 137: CHM 137L, MAT 253.

Prerequisite for 138: CHM 137.

Corequisite for 138: CHM 138L, MAT 254.

Prerequisite for 139: CHM 138.

Corequisite for 139: CHM 139L.

A rigorous, in-depth study of chemical principles designed for the well-prepared student.

137L, 138L, 139L. Advanced Modern Chemistry Laboratory. 1, 1, and 2 hours, respectively.

Corequisite: CHM 137, 138, 139, respectively.

240, 241. Fundamental Organic Chemistry. 4 hours each.

Prerequisite: CHM 122 and 122L or 138 and 138L.

A two-quarter sequence designed to teach students the basics of organic chemistry in preparation for entrance into veterinary medicine and pharmacy schools or for majors in bioscience fields. Credit cannot be used toward a major in chemistry.

240L, 241L. Fundamental Organic Chemistry Laboratory. 1 hour each.

Prerequisite or corequisite: CHM 240 and 241 respectively.

261. Elementary Organic Chemistry. 4 hours.

Not open to students with credit in organic chemistry.

Prerequisite: Two quarters of college chemistry, numbered 111 or above.

A brief introduction to organic chemistry with material of special interest to students of agriculture, home economics, and forest resources.

261L. Elementary Organic Chemistry Laboratory. 1 hour.

Prerequisite or corequisite: CHM 261.

280. Quantitative Inorganic Chemistry. 3 hours.

Prerequisite: CHM 123 and 123L.

Corequisite: CHM 280L.

The fundamental principles of quantitative analysis using gravimetric, volumetric, and spectrophotometric measurements.

280L. Quantitative Inorganic Chemistry Laboratory. 2 hours.

Prerequisite or corequisite: CHM 280.

340, 341, 342. Modern Organic Chemistry. 4 hours each.

Prerequisite: CHM 121 and 121L, 122 and 122L or 137 and 137L, 138 and 138L.

A three-quarter sequence designed for chemistry majors and students preparing for medical and dental schools. The course con-

tent of CHM 240 and 241 does not parallel that of CHM 340 and 341 and consequently CHM 240 is not an acceptable prerequisite for CHM 341.

340L, 341L, 342L. Modern Organic Chemistry Laboratory. 1 hour each.

Prerequisite or corequisite: CHM 340, 341, 342, respectively.

347, 348, 349. Introduction to Research. 5, 5, 1-5 hours respectively.

Prerequisite: CHM 381 and 381L or 427 or 491C or permission of department.

381. Advanced Analytical Chemistry. 3 hours.

Prerequisite: CHM 139 and 139L or 280 and 280L, 340 and 340L.

Corequisite: CHM 341 and 341L.

Separation methods including gas chromatography, quantitative spectrometric instrumentation and methods, and the interpretation of spectra.

381L. Advanced Analytical Chemistry Laboratory. 2 hours.

Prerequisite or corequisite: CHM 381.

382. Clinical Chemistry. 3 hours. Three lectures and/or discussion periods.

Prerequisite: CHM 280 and 280L or 139 and 139L, BCH (BIO) 310 and permission of department.

An introduction to the principles of chemistry as applied to the modern clinical laboratory with emphasis on automated separations, analyses and data collection.

382L. Clinical Chemistry Laboratory. 2 or 3 hours. Two or three lab periods.

Corequisite: CHM 382.

An introduction to the experimental methods of current use in clinical chemistry.

390, 391. Fundamentals of Physical Chemistry. 3 hours each.

Prerequisite: CHM 280 and 280L or 139 and 139L and 341 and 341L, PCS 229-229L or 239-239L, MAT 254.

A two-quarter course in the basic concepts and techniques of physical chemistry. Designed for pre-medical and non-professional chemistry majors.

395. Physical Chemistry for Biologists. 5 hours.

Prerequisite: CHM 341 and 341L, PCS 128-128L, MAT 253.

A condensed, one-quarter course stressing the topics of physical chemistry of most importance for students in the biological sciences. This course cannot be used as credit toward a chemistry major.

400. The History of Chemistry. 5 hours.

Prerequisite: 25 hours of chemistry or permission of department.

The historical development of chemistry and its relation to other sciences. Economics attendant to the chemical industries included and individual investigations of specific developments encouraged through written assignments based upon literature searches. The important work of prominent chemists in various fields will be treated.

402L. Experimental Inorganic Chemistry. 2 hours.

Prerequisite or corequisite: CHM 426.

A laboratory course involving the synthesis and characterization by modern techniques of typical inorganic compounds.

405. The Literature of Chemistry. 2 hours.

Prerequisite: 15 hours of chemistry or permission of department.

An introduction to the literature of chemistry, research procedures, and directions which can be found only in original sources.

417. Principles of Molecular Spectroscopy. 3-12 hours (three hours per quarter).

Prerequisite: CHM 491C or equivalent.

The general theory of specific areas of spectroscopy such as ultraviolet, infrared, NMR, ESR, or mass spectrometry.

418. Methods of Molecular Spectroscopy. 2-8 hours (two hours per quarter).

Prerequisite: CHM 491C or equivalent.

Complements CHM 417 by studying the instrumentation and operation of specific instruments.

421. Advanced Inorganic Chemistry. 5 hours.

Prerequisite: CHM 123 and 123L and one other chemistry course with lab.

A comprehensive study of inorganic chemistry based upon the periodic arrangement of the elements.

426, 427. Intermediate Inorganic Chemistry. 3 hours each.

Prerequisite: CHM 491C or equivalent.

A two-quarter sequence designed as an introduction to modern theories of bonding and structure, reaction mechanisms and synthetic methods in inorganic systems.

430, 431, 432. Intermediate Organic Chemistry. 3 hours each.

Prerequisite: CHM 441 and 441L or 491C or equivalent or permission of department.

A three-quarter sequence designed to increase the student's understanding of structure, mechanisms and synthesis as applied to organic compounds and reactions.

437. Interpretive Spectroscopy in Organic Chemistry. 3 hours.

Prerequisite: CHM 342 and 342L.

Practical introduction to ultraviolet, infrared, ^1H - and ^{13}C -nuclear magnetic resonance, and mass spectroscopy as tools for characterization of the structure of organic molecules, with particular emphasis on identifying structures from representative sets of spectra.

441. Organic Qualitative Analysis. 2 hours.

Prerequisite: CHM 342 and 342L.

Corequisite: CHM 441L.

An application of organic chemistry to the solution of structural problems, including both chemical and spectroscopic methods.

441L. Organic Qualitative Analysis Laboratory. 3 hours.

Corequisite: CHM 441.

444. Heterocycle Chemistry. 3 hours.

Prerequisite or corequisite: CHM 342 and 342L.

A study of the structures, spectra, reactions and syntheses of heterocyclic compounds.

480. Introductory Instrumental Analysis for Biologists. 3 hours.

Prerequisite: CHM 280 and 280L or equivalent, or permission of department.

A broad survey of those topics of instrumental analysis of particular importance to the biological sciences.

491ABC. Physical Chemistry. 4 hours each.

Prerequisite: CHM 139 and 139L or 280 and 280L, 341 and 341L, PCS 229 or 239, MAT 255.

A three-quarter sequence in the fundamental principles of physical chemistry. Kinetic molecular theory, thermodynamics, equilibria, electrochemistry, reaction kinetics, quantum mechanics and molecular spectroscopy. Intended for students who will enter chemistry as a profession or will do advanced study in chemistry.

492. Chemical Thermodynamics. 3 hours.

Prerequisite: CHM 491C or equivalent.

Classical and statistical thermodynamics as applied to chemical reactions, phase equilibria, and solutions.

493. Quantum Chemistry. 3 hours.

Prerequisite: CHM 491C or equivalent.

Introduction to basic principles of quantum mechanics and applications to model systems. Approximation methods, chemical bonding and spectroscopy.

494. Chemical Kinetics. 3 hours.

Prerequisite: CHM 491C or equivalent.

Mechanisms and energetics of chemical reactions in the gas phase and in solution. Hetero-

geneous reactions, collision and transition state theories and relaxation methods.

495. Radiochemistry. 3 hours. Lectures and laboratory exercises.

Prerequisite: CHM 391 or 491B.

Principles of radioactivity and the measurement of ionizing radiation. Applications to chemical problems.

496A. Experimental Physical Chemistry. 1 hour.

Prerequisite or corequisite: CHM 390 and 391 or 491A.

Treatment of experimental data, errors, graphical procedures and mathematical techniques.

496BC. Experimental Physical Chemistry. 2 hours each.

Prerequisite or corequisite: CHM 391 or 491BC.

Laboratory experiments in selected areas of physical chemistry. Thermochemistry, colligative properties, electrochemistry, reaction kinetics and spectroscopy.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

497. Introductory Statistical Thermodynamics. 3 hours.

Prerequisite: CHM 491C.

A study of the thermodynamic properties of macroscopic systems in terms of molecular properties. Boltzmann, Bose-Einstein and Fermi-Dirac distributions and their application to chemical and physical systems.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

580. Instrumental Methods of Analysis. 3 hours.

Prerequisite: CHM 341 and 341L, 381 and 381L and 496C.

The use of electrochemical (ion selective electrodes, polarography and coulometry) radiochemical, thermal (thermogravimetry, scanning calorimetry) and kinetic methods of analysis.

580L. Instrumental Methods of Analysis Laboratory. 2 hours.

Prerequisite or corequisite: CHM 580.

581. Chemical Instrumentation. 4 hours.

Prerequisite: PCS 128-128L or 138-138L.

A systematic study of electronic measurements including the design and construction of instruments to solve practical chemical problems.

581L. Chemical Instrumentation Laboratory. 2 hours.

Prerequisite or corequisite: CHM 581.

585. Interpretive Spectroscopy. 3 hours.

Prerequisite: CHM 342 and 342L and 381 and 381L.

Fundamental emphasis will be placed on the principles and practice of interpretive spectroscopy. Spectroscopic methods such as IR, Raman, NMR, ESCA and mass spectrometry pertinent to the identification and characterization of organic and inorganic materials will be stressed. The philosophy of the course relates to the combined use of these techniques for structural identification, as opposed to use of a single technique.

CLASSICS

Major in Greek or Latin: For the A.B. in Greek or Latin, 40 hours of coursework are required, including four courses (20 hours) in the language at or above the 400-level, and four additional courses (20 hours) either in the language or from a variety of offerings in Classical Culture (400-level). Majors must also elect CLC 120 or 305H (Greek Culture) or 121 or 306H (Roman Culture), as appropriate, to satisfy 5 hours of the College literature requirement. Students interested in secondary school teaching may work simultaneously toward T-4 (bachelor's level) certification.

Major in Classical Culture and Classical Archaeology Concentration: For the A.B. degree in Classical Culture, 40 hours of coursework are required, including five courses (25 hours) in Classical Culture (400-level), and three additional courses (15 hours) either in Classical Culture, Ancient Art, Ancient History, Ancient Philosophy, Latin (400-level), Greek (400-level), or other courses approved by the department. Majors must also elect CLC 120 or 305H (Greek Culture) and 121 or 306H (Roman Culture) to satisfy the College literature requirement, and they are encouraged to take Greek or Latin to satisfy the College language requirement. A program for concentrating in Classical Archaeology is available to Classical Culture majors.

Minor in Greek, Latin, or Classical Culture: Minors must complete four courses (20 hours) at the 400-level in the minor area, Greek, Latin, or Classical Culture.

Undergraduate Literature and General Education Requirements: Students may satisfy the literature requirement in the College of Arts and Sciences (and most other Schools and Colleges of the University) by taking CLC 120 or 305H, 121 or 306H, and/or 150, or any 400-level Latin or Greek course. CLC 120 or 305H and 121 or 306H and 150 also satisfy the General Education requirement.

Honors Curriculum: Besides the specially designated Honors courses in Classics (CLC 305H, 306H, 307H, 320H, and 496-499H), CLC 453 (Ancient Cities of Greece and Rome), 459 (Roman Satire) and 460 (Roman Epic Poetry), and selected 400-level Latin courses may be elected for Honors Option credit.

Studies Abroad in Greece and Italy: Opportunity for study in Greece and Italy is offered through the University System of Georgia Studies Abroad Program every summer. CLC 120 and 121, or equivalents, which satisfy the College literature requirement, are regularly offered, together with two other Classical Culture courses for those who have already taken 120 and/or 121; students ordinarily earn 15 hours of undergraduate credit. For information, contact the Classics Department Head.

Carthage Excavations: The University of Georgia is a co-sponsor of the American Excavations at Carthage in North Africa, where Georgia undergraduates have the opportunity to excavate in the summer term and to earn ten hours of credit (see below, CLC 480, 481). For information contact Dr. Norman in the Classics Department.

Classical Culture (CLC)

All Classical Culture courses are given in English and require no knowledge of either the Latin or the Greek languages.

120. Classical Culture: Greece. 5 hours.

A study of the characteristics of Greek literature, made principally through translations of selections from Greek authors.

121. Classical Culture: Rome. 5 hours.

A study of the characteristics of Latin culture, made principally through translations of selections from Latin authors.

150. Mythology in Classical Literature. 5 hours.

An introduction to the myths and sagas of the Greeks and Romans, in particular through ancient literature.

200. Country Life in the Ancient World. 5 hours.

Prerequisite: HIS 111 or CLC 120 or 121.

Study of country life in ancient society, literature, and the arts from the Neolithic Period to the Late Roman Empire. Emphasis will be given to Greek and Roman civilization and selections of Greek and Latin literature will be read in translation.

305H. Classical Culture: Greece (Honors). 5 hours.

Not open to students with credit for CLC 120. This course involves studies of important phases of Greek civilization from the Bronze Age through the time of Alexander the Great. Attention is given to history, literature, government, art, and science.

306H. Classical Culture: Rome (Honors). 5 hours.

Not open to students with credit for CLC 121. This course involves studies of important phases of Roman civilization through the reading of Latin authors in translation. Attention is given to history, literature, government, art, and science.

307H. Mythology in Classical Literature (Honors). 5 hours.

Not open to students with credit for CLC 150. This course involves study of the myths and sagas of the Greeks and Romans, in particular through ancient literature, and their function as a framework of reference for classical and subsequent Western literature.

310. English Derivatives from Greek and Latin. 5 hours.

General etymology and vocabulary of the English language. Prefixes, suffixes, and root words, as well as families of words will be studied.

311. Medical Terminology. 5 hours.

A course introducing medical terminology derived from Greek and Latin. The course will concentrate on recognizing the meanings of the components of medical terms, and understanding the principles that govern their arrangement. History of ancient medicine will also be considered.

320H. English Derivatives from Greek and Latin (Honors). 5 hours.

Not open to students with credit for CLC 310. An introduction to the etymology of English with particular regard to roots of Greek and Latin origin.

449. Archaic Greece. 5 hours.

Prerequisite: CLC 120 or 305H or HIS 325 or 438M or permission of department.

Close study of the expanding world of Greek culture in the period from 750 to 480 B.C., including consideration of the many new and influential developments in art, literature, history, political science, and philosophy, and their interrelationships.

450. Theory and Analysis of Ancient Myth. 5 hours.

Prerequisite: CLC 120 or 150, or permission of department.

An introduction to the various approaches to the interpretation of ancient Greek and Roman myth, with emphasis on structuralist and semiotic interpretations.

451. Greek Sanctuaries and Festivals. 5 hours.

Prerequisite: CLC 120 or 305H or permission of department.

An examination of the major Greek sanctuaries and their physical remains, and of the Greek religious calendar and its important festivals, including the Olympic Games and the Panathenaica.

452. Classical Archaeology. 5 hours.

A survey of Greek and Roman Archaeology, including a discussion of the development of field techniques from Schliemann to the present day.

453. Ancient Cities of Greece and Rome. 5 hours.

Survey of selected Greek and Roman cities and their architecture to understand the principles upon which they were planned and laid out. Students will study the theories of Hippodamus and others and the writings of Vitruvius. Detailed study of the topography of Athens and Rome.

454. The Etruscans and Early Rome. 5 hours.

Prerequisite: CLC 121 or HIS 325 or HIS 439F or permission of department.

A survey of the art and culture of the people of Northern Italy known as the Etruscans, with special attention to their relationship with the Greek world and their role in the development of Rome as a city.

455. Pompeii and Herculaneum: The Buried Cities. 5 hours.

Prerequisite: CLC 121 or 306H, or HIS 325 or 439F or 439P, or permission of department.

An in-depth study of Pompeii, Herculaneum and the area destroyed by the eruption of Mt. Vesuvius. Concentration will be on political, social, religious, and economic life, combined with a study of the painting, sculpture, and architecture of the excavated cities and villas.

456. Homer and the Epic Tradition. 5 hours.

A study of Homer in translation emphasizing

his influence on later European literature. Analysis of the epic as a literary form; reading of selected epics of other periods.

457. (CML) Ancient Tragedy. 5 hours.

Prerequisite: Five hours of literature or ancient history or drama.

Examination of the conventions of classical tragedy as exemplified in the plays (in English translation) of the Greek dramatists Aeschylus, Sophocles, and Euripides, as well as the Roman tragedian Seneca.

459. Roman Satire. 5 hours.

Prerequisite: CLC 121 or 306H, or HIS 325, 439F, or 439P, or permission of department.

A survey of the development of Roman satire, including an analysis of the social, political, and moral climate of ancient Rome.

460. Roman Epic Poetry. 5 hours.

Prerequisite: CLC 121 or 306H or HIS 325 or 439F or 439P or permission of department.

A study of the epic poetry of ancient Rome with special emphasis on the three outstanding epic writers: Ennius, Vergil, and Lucan. The historical background of epic will be examined, and the poems will all be read in English translation, some attention being given to Renaissance and modern translations.

461. Ancient Comedy. 5 hours.

Prerequisite: Five hours of literature or ancient history or drama.

A survey in translation of ancient comedy, both Greek and Roman, including plays by Aristophanes, Menander, Plautus, and Terence, and a consideration of the differences between political satire on the one hand and humor involving timeless human dilemmas on the other.

462. The Archaeology of the Greek Colonies. 5 hours.

Prerequisite: CLC 120 or HIS 111 or 325 or 438M or 438P or ART 287 or permission of department.

An examination of the archaeology of the Greek colonies in Ionia, Magna Graecia, and the Black Sea area to identify and explain the combination of Greek and indigenous cultures in these areas on the fringes of the Greek world.

463. The Hellenistic World. 5 hours.

Prerequisite: CLC 120 or ART 287 or HIS 111 or 325 or 438M or 438P or 439F or 439P or permission of department.

An in-depth examination of archaeology, art, culture and history of Greece and the East from the rise of Alexander to Rome's annexation of Egypt.

464. The Archaeology of Rome's Provinces. 5 hours.

Prerequisite: CLC 121 or 306H or 453 or HIS 111 or 439P or ART 287 or 477 or permission of department.

An examination of the archaeology of the Western and/or Eastern provinces of the Roman Empire, concentrating on the major cities and sanctuaries and their physical remains.

465. The Archaeology of Egypt and the Near East. 5 hours.

Prerequisite: CLC 120 or 121 or HIS 325 or 437M or 438M or ART 287 or permission of department.

A close examination of the archaeology, culture, and history of Egypt and the Near East with special emphasis on the interconnections of these two areas with the rest of the Mediterranean world.

480. Practicum in Classical Archaeology. 5 hours.

Prerequisite: CLC 120 or 121 or permission of department.

Corequisite: CLC 481.

Introduction to all aspects of modern field archaeology on a classical site, including excavation techniques, the keeping of field records, and the classification and conservation of finds from the moment of recovery to their final deposition in museums. Open only to students participating in the University's Mediterranean excavation.

481. Archaeology of Punic and Roman Carthage. 5 hours.

Prerequisite: CLC 120 or 121 or permission of department.

Corequisite: CLC 480.

An intensive study of the civilization of Roman North Africa from the Punic period through the Arab Conquest, using the important city of Carthage as a model. Open only to students participating in the University's Mediterranean excavation.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Greek (GRK)

101. Elementary Greek I. 5 hours.

An introduction to the pronunciation, grammar, reading, and translation of classical Attic Greek.

102. Elementary Greek II. 5 hours.

Prerequisite: GRK 101 or equivalent.

An introduction to the pronunciation, grammar, reading, and translation of classical Attic Greek, continued from GRK 101.

203. Readings in Greek. 5 hours.

Prerequisite: GRK 101 and 102.

Selected readings from Greek authors.

210. Greek New Testament. 5 hours.

Prerequisite: GRK 101 and 102.

Introduction to koine Greek through reading, translation, and analysis of selections from one or more of the gospels.

304. Intermediate Greek: Plato. 5 hours.

Prerequisite: GRK 203 or equivalent.

Close study of Plato's *Apology*, plus selections from his *Crito* and *Phaedo*. Attention to both style and philosophic thought.

310. Intermediate Greek: New Testament. 5 hours.

Prerequisite: GRK 203 or 210.

Intermediate readings in the Greek New Testament.

401. Homer. 5 hours.

Prerequisite: GRK 304 or equivalent.

A detailed study of selections from the *Iliad* and/or the *Odyssey*.

402. Hesiod. 5 hours.

Prerequisite: GRK 304 or equivalent.

Close study of Hesiod's two surviving poems, *Theogony* and *Works and Days*, with special attention to the relationship of his language and religious thinking to that of Homer.

403. Greek Lyric Poets. 5 hours.

Prerequisite: GRK 304 or equivalent.

A study of the whole body of extant Greek elegy and lyric, with attention to the political and social background, and to the relation of these literary types to epic and dramatic poetry.

404. Herodotus and Thucydides. 5 hours.

Prerequisite: GRK 304 or equivalent.

The Persian and Peloponnesian Wars through selected readings.

405. Aeschylus. 5 hours.

Prerequisite: GRK 304 or equivalent.

Close study of two or three of Aeschylus' seven surviving plays, with emphasis on his theology and special uses of the Greek language.

406. Sophocles. 5 hours.

Prerequisite: GRK 304 or equivalent.

Close study of two or three of Sophocles' seven surviving plays, with emphasis on the poet's religious and humanistic values and his dramatic style.

407. Euripides. 5 hours.

Prerequisite: GRK 304 or equivalent.

Close study of two or three of Euripides' nineteen surviving plays, with emphasis on the poet's dramatic style and his treatment of social, political and religious themes.

408. Aristophanes. 5 hours.

Prerequisite: GRK 304 or equivalent.

Reading, translation, and analysis of selected comedies of Aristophanes. Emphasis is placed on the language, style, and thought of Aristophanes, and on the characteristics of Greek Old Comedy.

409. Advanced Readings: Plato. 5 hours.

Prerequisite: GRK 304 or equivalent.

Advanced reading, translation, and analysis of the dialogues of Plato. Emphasis is placed on the language, style, and philosophical thought of Plato.

410. Attic Orators. 5 hours.

Prerequisite: GRK 304 or equivalent.

A study of the orations of Demosthenes, Lysias, and Aeschines, with emphasis on the function and techniques of persuasion in oratory and on the political and social contexts of these orations.

420. Readings in Selected Greek Authors. 5 hours per quarter; maximum of 15 hours.

Prerequisite: GRK 304 or equivalent.

Study of less commonly read Greek authors, such as Pindar, Xenophon, Menander, Lucian, Plutarch, to be chosen according to the interests of students and instructor.

Latin (LAT)

Students continuing Latin begun in high school will be placed in the appropriate course on the basis of scores on the College Entrance Examination Board Achievement Test, the CEEB Advanced Placement Test, or the placement test administered by The University of Georgia Testing and Evaluation Center, together with other pertinent information.

101. Elementary Latin I. 5 hours.

An introduction to the Latin language: pronunciation, fundamentals of grammar, reading and translation.

102. Elementary Latin II. 5 hours.

Prerequisite: LAT 101 or one year of high school Latin.

An introduction to the Latin language, continued from Latin 101.

203. Intermediate Latin. 5 hours.

Prerequisite: LAT 102 or two high school units in Latin.

An introduction to the reading of Latin prose. Some review of elementary grammar and syntax will be included, and students will read continuous prose passages selected from a variety of authors.

304. Readings in Latin Poetry. 5 hours.

Prerequisite: LAT 203 or equivalent.

An introduction to Latin poetry, poetic syntax, meter, and style. Students will read and translate dactylic hexameter poetry, with selections from the works of Vergil and/or Ovid.

402. Roman Epic. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from the Latin epic poets Ennius, Vergil, Lucan, and others.

403. Roman Historians. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from such Roman historical writers as Caesar, Sallust, Livy, Tacitus, and Suetonius.

404. Roman Elegy and Lyric. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from the works of the poets Catullus, Tibullus, Horace, Ovid, and others. Studies in the development of Latin poetic form, meter, and diction.

405. Roman Epistles. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from the letters of Cicero, Seneca, Pliny the Younger, and others.

406. Roman Satire. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from the satirists Horace, Juvenal, and others.

407. Roman Drama. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from the comedies of Plautus and Terence, and the tragedies of Seneca and others.

408. Roman Didactic Poetry. 5 hours.

Prerequisite: LAT 304 or equivalent.

The poet as teacher. Major portions of Lucretius' poetic treatise on Epicureanism, the *De Rerum Natura*, and Vergil's *Georgics*. The manner in which poetic form and imagery express philosophy.

409. Medieval Latin. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from one or more Medieval Latin authors. A study of Latin vocabulary and style during the Middle Ages.

410. Latin Epigraphy. 5 hours.

Prerequisite: LAT 304 or equivalent.

Study of Latin inscriptions and the science of epigraphy.

411. Roman Rhetoric. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from the rhetorical writings and/or orations of Cicero, Quintilian, Seneca Rhetor, and others.

420. Advanced Readings in Latin. 5 hours.

Repeatable for maximum 15 hours credit.

Prerequisite: LAT 304 or equivalent.

Selected readings in one or more Latin authors or genres. Topics to be selected on the basis of students' needs.

COMPARATIVE LITERATURE (CML)

Requirements for a Major leading to the A.B. in Comparative Literature: 20 hours of Comparative Literature courses at the 300-level or above; 20 senior division hours of literature courses in Classics, Germanic and Slavic, Romance, and/or English, 10 of which involve substantial use of a foreign language (introductory-level coursework in a second foreign language may be substituted for 10 of the 20 hours); a fluent literary reading knowledge of one foreign language (usually demonstrated by successful coursework on the 400-level of the language). The entire program is to be approved by the undergraduate advisor in Comparative Literature.

Prerequisite for 200-level courses in Comparative Literature, except for CML 221, 222, 225H, and 226H, is completion of the Arts and Sciences literature requirement, or permission of department.

210. Speculative Fiction. 5 hours.

An historical and thematic treatment of fictional speculation about scientific matters from the dialogues of Plato to the contemporary science fiction of Vonnegut.

212. History and Theory of European Comedy. 5 hours.

A survey of European comedy from Classical Antiquity to the 20th Century, with emphasis on theories of humor and laughter. Reading of representative works.

214. Introduction to Early Women Writers. 5 hours.

An introductory survey of Western World literature as represented by women writers from the 7th Century B.C. through the 17th Century A.D.

215. Introduction to Modern African Literature. 5 hours.

An introductory survey of the literature of 20th-Century Africa in translation, with emphasis on the African novel.

216. Classical Mythology in Modern Literature. 5 hours.

A discussion of 20th-Century literary works (emphasis on narrative and drama dealing with reinterpretation of ancient classical myths, inclusive of English, American, Italian, French, Spanish, German and Russian literatures).

217. Detective Fiction. 5 hours.

An historical study of the evolution of the mystery story in the United States, England, and Europe, based on readings from acknowledged masters of the genre such as Poe, Doyle, Christie, Simenon, Hammett, Chandler, et al. No foreign language requirement.

221, 222. Western World Literature. 5 hours each.

Prerequisite: ENG 102 or 105H.

A survey of Western World Literature from Homer to the 20th Century.

225H, 226H. Western World Literature (Honors). 5 hours each.

Not open to students with credit for CML 221 and 222.

Prerequisite: ENG 102 or 105H.

A survey of Western World Literature from Homer to the 20th Century for Honors.

Prerequisite for 300 and 400-level Comparative Literature courses is completion of the Arts and Sciences literature requirement and a reading knowledge of one foreign language, or the permission of the department.

301. Introduction to Comparative Literature. 5 hours.

An introduction to the methods and aims of comparative literature with emphasis on genres, themes, and literature and the other arts.

407. Renaissance European Literature. 5 hours.

A survey of the literature of Western Europe (Italian, French, Spanish, Germanic, and English), 1450-1600, with emphasis on literary types and prevailing ideas. Reading of representative works.

408. The Romantic Movement in Western Literature. 5 hours.

A comparative study of the rise and development of Romanticism in the 18th and 19th Centuries, with reading of selected literature and criticism.

409. Modern Continental Poetry. 5 hours.

A study of experimental trends in lyric poetry of Western Europe from mid-19th Century to the present.

411. Medieval Narrative. 5 hours.

A study of the types of medieval narrative — epic, romance, saga, beast-epic, *fabliau*, and *exemplum* — with reading and an analysis of outstanding examples of these types.

412. 18th-Century European Literature. 5 hours.

A survey of the literature of England, France, and Germany in the 18th Century, with emphasis on literary types and prevailing ideas. Reading of representative works.

415. The Novel. 5 hours.

A study of the novel as a genre. Origins of prose fiction, theory of the novel, and representative readings from the 16th through the 20th Centuries in Spanish, English, French, German, and Russian.

417. The Modern Continental Novel. 5 hours.

The crisis in 20th-Century Western civilization as reflected in the fiction of such writers as Joyce, Proust, Mann, Gide, Kafka, Camus, and Moravia.

420. Literature and the Visual Arts. 5 hours.

This course will treat formal, philosophical, and thematic relationships between literature and one or more of the visual arts in a given period. Instructor will determine focus of course.

425. Seminar in the Comic Mode. 5 hours.

A seminar exploring the relation of humor to the philosophical and ideological orientation of culture in comic literature from Europe and Latin America from the Middle Ages to the present.

426. Seminar in the Tragic Mode. 5 hours.

A study of the nature of the tragic and the relationship of tragic literature to the philosophic, religious, and ideological orientation of its culture from Antiquity to the present in the literatures of Europe and America.

427. Seminar in the Didactic Mode. 5 hours.

A study of didactic literature in relation to the ideology of its culture (dominant or subversive) in European and American letters.

451. Music and Literature. 5 hours.

A comparative study of the forms, relationships, and aesthetics of music and literature.

457. (CLC) Ancient Tragedy. 5 hours.

See CLC 457.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

COMPUTER SCIENCE (CSC)

In order to be classified as a major in the Department of Statistics and Computer Science, a student must have completed: (a) STA 221, 222 or STA 210H, 211H or STA 200, CSC 201 (with an average of 2.5 or higher) and (b) MAT 253 (with an average of 2.0 or higher). To earn an undergraduate degree in Computer Science a student must complete 40 hours of major coursework and an additional 155 hours of core curriculum (130 hours of general studies, 5 hours of basic P.E. and 20 hours of electives). Within the 40 major hours, a student selects an option in either (a) Commercial Data Processing, or (b) Scientific Programming. All students must take CSC 301, 302, 303, MAT 254, 255, and 256. In addition to the 40 hours requirement, students are required to take 30-33 hours of related coursework. A grade point average of 2.5 is required in the 40 major hours (this requirement applies to all students who included CSC 301 in their major courses starting in the Fall Quarter, 1981), and no course in which a D or F is made can be used as a major course. Also certain minimum grade point averages are required in non-major courses. A student can obtain a detailed description of course requirements from the departmental office, 415 Boyd GSRC.

201. Introduction to Computing. 5 hours.

Prerequisite: Credit for exemption from MAT 100.

Algorithms, programs, and computers. Basic programming techniques. Digital representation of data. Programming projects in the FORTRAN language. Computing systems.

301. Techniques of Computer Programming. 5 hours.

Prerequisite: CSC 201 and STA 200 or STA 221, 222.

This intermediate level programming course considers problems in such areas as character string operations, string processing, record/file manipulation, numerical problems, sorting and searching; it emphasizes the use of advanced FORTRAN, especially arrays, subprograms, disk input/output, and common storage, for their solution. Intended for students already familiar with FORTRAN.

302. Assembler Language Programming. 5 hours.

Prerequisite: CSC 301.

Computer structure and machine language; symbolic coding and assembly systems; program segmentation and linkage; interrupt-handling. (Winter and Spring quarters.)

303. Data Structures. 5 hours.

Prerequisite: CSC 302.

Basic concepts of information as data. Lists and strings. Tree structures. Storage devices and structures. Sorting and searching techniques. Storage allocation and collection. (Spring and Summer quarters.)

321. Application of Computer Science in Natural Resource Management. 4 hours.

Prerequisite: MAT 253 and STA 200.

An introductory course in basic computer science concepts and the application of computer technology to problems in natural resource management. (Winter quarter.)

411. Data Management. 5 hours.

Not open to students with credit for CSC 303 or 437 or 438.

A service course dealing with the file storage/manipulation capabilities of large computers. The course covers those data structures needed as background and includes a discussion of database management systems. May not be used for major credit.

432. Computer Systems Organization I. 5 hours.

Prerequisite: CSC 302 or 501.

Functional structure of hardware components and their interrelationship, input/output facilities, control functions, microprocessors. (Winter quarter.)

433. Computer Systems Organization II. 5 hours.

Prerequisite: CSC 432.

Operating system components, structure of multiprogramming systems, teleprocessing. (Spring quarter.)

434. Numerical Methods for Scientific Computation I. 5 hours.

Prerequisite: MAT 256, CSC 302 or 500.

Principles for writing subroutines for mathematical computer programs including series solutions, continued fractions, numerical quadrature, and interpolation. (Winter quarter.)

435. Numerical Methods for Scientific Computation II. 5 hours.

Prerequisite: CSC 434, core MAT 358 or 410.

Subroutines for general quadratures, differential equations, matrix calculations, conversational and real-time scientific programs. (Spring quarter.)

437. Database Management I. 3 hours.

Prerequisite: CSC 303 and 503.

A two-quarter sequence on computerized data management. The first quarter concentrates on computer file organization, access, and retrieval techniques. Consideration is given to sequential files, indexed sequential files, and direct files, especially as used with the COBOL programming language.

438. Database Management II. 3 hours.

Prerequisite: CSC 437.

A continuation of CSC 437. Large database management systems based on the hierarchical model, the network model, and the relational model, are studied.

447. (MAT) The Design and Analysis of Computer Algorithms I. 3 hours.

See MAT 447.

448. (MAT) The Design and Analysis of Computer Algorithms II. 3 hours.

See MAT 448.

449. (MAT) The Design and Analysis of Computer Algorithms III. 3 hours.

See MAT 449.

457. Design and Construction of Compilers — I. 3 hours.

Prerequisite: CSC 303.

First of a three-quarter sequence covering compilers for high-level programming languages. Emphasis is on context free grammars, various parsing techniques, and a project in which a working compiler is developed.

458. Design and Construction of Compilers — II. 3 hours.

Prerequisite: CSC 457.

A continuation of CSC 457.

459. Design and Construction of Compilers — III. 3 hours.

Prerequisite: CSC 458.

A continuation of CSC 458.

490. Special Topics in Computer Science. 1-5 hours; maximum 10 hours.

Prerequisite: CSC 302.

A special topics course for upper division computer science majors and graduate students taken with permission of the instructor. Opportunity for independent study in advanced computer science topics, research on current software development projects, or participation in a work/study program on computer center operation and administration.

493. Terminals, Operating and Programming the Cyber 18/30. 5 hours.

Prerequisite: CSC 201 and permission of department.

An upper division course for computer science majors. Opportunity to learn computer operation, programming via terminals and RPG programming.

500. Computer Programming. 5 hours.

Prerequisite: MAT 109 or 116.

An introductory computer programming course for upper division non-computer science majors and graduate students. Topics covered include algorithms, programs, computers, programming projects in the FORTRAN language, computing applications, digital representation of data, and an introduction to assembler language programming.

501. Advanced Programming Techniques. 5 hours.

Prerequisite: CSC 500.

Advanced computer programming techniques, programming projects in several languages, system hardware/software facilities.

503. Commercial Data Processing. 5 hours.

Prerequisite: Credit for or exemption from MAT 100.

An introductory computer programming course for upper division non-computer science majors and graduate students. Computer programming for business and commercial applications, using the COBOL language. (Fall, Winter, and Spring quarters.)

DRAMA AND THEATRE (DRA)

The Department of Drama offers the A.B., B.F.A., and B.A.Ed. degrees. All majors should first register in the A.B. program until the required courses, DRA 205ABC, 230, 250, 315, and 320 are completed. Students wishing to enter the B.F.A. program should have a B or better grade in each course before they apply

to the faculty for a review for admittance to the B.F.A. program.

205ABC. Applied Drama Laboratory. 1 hour each.

Prerequisite: Successful completion of at least 45 undergraduate credit hours.

Three quarter hours required of lower division majors. Individually assigned production and/or performance crew.

230. Introduction to Theatrical Design. 5 hours. Lecture-laboratory course.

Basic design for theatre technicians with emphasis on drafting, perspective, color theory, rendering in various media and drawing the human form.

250. Beginning Acting. 5 hours.

Participation in daily regimen of exercises for the body and the voice as well as a series of group and individual activities designed to introduce and develop basic acting skills.

300. Appreciation of Great World Theatre. 5 hours.

Introduction to all aspects of the theatrical experience on stage, screen, and TV, emphasizing the role of the audience, as well as that of the artist.

301. Introduction to Acting. 5 hours.

A course for the non-drama major designed to introduce and develop basic acting skills.

302. Basic Dramatic Writing. 5 hours.

An introduction to dramatic writing for various media including stage, film and television. Writing short scripts for reading performance.

310H. Introduction to World Drama and Theatre (Honors). 5 hours.

Not open to students with credit for DRA 300. See DRA 300.

312. Introduction to Cinema. 5 hours.

An introduction to film aesthetics and an analysis of film as an art form. Critical viewing of selected films in laboratory. Discussions and analyses of film in class lecture. Papers on topics in film and audience values.

315. Contemporary Dramatic Arts. 5 hours.

Primarily for drama majors. A survey of current theories and practices in all modern forms of dramatic art: stage, cinema, television, sound and mixed media.

320. Development of Dramatic Art. 5 hours.

Comprehensive survey and general approach to the history of theatre and its literature.

333. Stage Costuming. 5 hours. Lecture-laboratory course.
Fundamental techniques of planning, pattern making, and construction of stage and screen costumes.

334. Scene Building and Painting. 5 hours. Lecture-laboratory course.
An introductory course in the arts of the theatre with emphasis on construction and painting of scenery.

352. Make-up for Stage and Screen. 5 hours. Primarily for majors in drama, visual arts, journalism. Basic principles and practices in make-up for stage, screen and television. Practice in use of cosmetics, wigs, hair pieces and facial prosthetics, masks. Work with departmental productions.

353. Theatrical Dance and Movement. 5 hours.
Primarily for drama majors. An introduction to basic stage movement and dance for performers and directors. A lecture-laboratory course with opportunities for performance.

400. Playwriting. 5 hours.
Laboratory course in dramatic writing, including study and practice in writing for the modern stage and screen.

412. Theory and Criticism of the Cinema. 5 hours.
An examination of the aesthetic basis of the international cinema as a dramatic medium and a history of the significant theories.

420. History of the Theatre. 5 hours.
Prerequisite: Two senior division courses in English or drama.
A study of the history of dramatic art from Greece through Shakespeare.

421. History of the Theatre. 5 hours.
Prerequisite: Two senior division courses in English or classics or drama.
A study of the history of dramatic art from Elizabethan period to Ibsen.

423. Theatre History from Mid-19th Century to the Present. 5 hours.
Prerequisite: Two senior division courses in English, speech, drama, classics, modern foreign language or comparative literature.
A study of the history of dramatic art from the mid-19th Century to the present.

425. History of Cinema. 5 hours.
A study of the development of the international film from its beginnings to the present, emphasis on cinema as a dramatic medium.

429. Play Analysis. 5 hours.

Prerequisite: Two senior division courses in English, drama, speech or permission of department.

A study of a method of analysis for dramatic scripts and an intensive examination of selected modern and period play scripts.

433. Period Dress, Manners and Movements for the Theatre. 5 hours.

An advanced survey of dress, manners and movement of selected theatrical periods, concentrating on the dictates of dress and manners upon dance and movement.

444. Continental Drama 1700-1900. 5 hours.
A history of dramatic literature and its presentation in continental Europe from the 18th Century through the Romantic Movement to the emergence of Realism.

445. Modern American Theatre. 5 hours.
A history of the American Theatre from Eugene O'Neill to the present.

446. History of Dramatic Art in Italy. 5 hours.
Prerequisite: Must be registered in the Cortona program and participate on-site.
Offered only in conjunction with summer quarter in Cortona, Italy. A study of dramatic art in Italy and Sicily from the Greek colonists to the present. Special emphasis on field trips to archaeological sites and special museums. Visits to contemporary performances.

448. Afro-American Drama. 5 hours.
A study of the Black theatre in America and its dramatic literature.

465T. (ENG) Modern Drama. 5 hours.
See ENG 465T.

488. Readers' Theatre. 5 hours.
Prerequisite: Two senior division courses in English, education, speech or drama.
A study of the theories, techniques and conventions of Readers' Theatre.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.
This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

500. Advanced Dramatic Writing. 5 hours.
Prerequisite: DRA 400 or equivalent.
A laboratory course for the advanced writer

interested in developing dramatic properties and materials for contemporary markets.

501. Intermediate Acting. 5 hours.

Prerequisite: DRA 250 or 301 or equivalent.

An intermediate course in acting intended for students not in the B.F.A. program. Study in voice, movement, and characterization. Practical work in Showcase productions.

505ABC. Applied Drama Laboratory. 1 hour each.

Individually assigned production and/or performance crew.

511. Theatre Management. 5 hours.

A critical examination of theatre management. A survey of the organization of theatre and promotional and managerial procedures.

530. Play Production for the High School Teacher. 5 hours.

Prerequisite: Two senior division courses in speech, English, drama, or secondary education.

Techniques and methods for meeting problems of play selection and play production in the secondary schools. Suggested elective for teachers of English in high schools.

531. Technical Problems. 5 hours.

Prerequisite: DRA 334 or permission of department.

Advanced study of the theory and techniques of scenery construction with emphasis on materials, equipment, organization, and relations between the production staff. Course may be repeated once for credit with change of subject matter.

533. Stage Costume Design and Research. 5 hours.

Prerequisite: DRA 230 and 333 or permission of department.

Research sources and techniques with application to the design of costumes for dramatic presentations.

534. History of Costume and Decor. 5 hours.

Prerequisite: DRA 230 or equivalent.

An investigation into the styles of costuming, architecture, furnishings, and ornamentation in significant theatrical periods.

535. Scene Design. 5 hours. Lecture-laboratory course.

Prerequisite: Two senior division courses in art or drama or courses in advanced drafting or drawing.

The principles and techniques of scene design and scene painting. Development of floor plans, sketches and scaled models. Suggested elective for majors in the visual arts.

536. Stage Lighting. 5 hours.

Study of problems of lighting for the stage and screen; lighting instruments, lighting control; operation of lighting equipment. Practical assignments in stage and film production.

552. Actor Training I. 5 hours.

Prerequisite: DRA 250 or equivalent.

An intensive course in voice and body training. The course stresses the development and use of the voice for the actor.

553. Actor Training II. 5 hours.

Prerequisite: DRA 552 or equivalent.

An intensive course in voice and body training. The course stresses the development and use of the body for the actor.

554. Characterization for the Actor. 5 hours.

Prerequisite: DRA 553 or equivalent.

A study of role analysis and the problems and techniques of creating subtext with special relation to the actor's natural qualities.

555. Acting IV: Advanced Acting. 5 hours.

Prerequisite: DRA 554 or equivalent.

A study of the problems and techniques of acting in periods and styles through intensive scene study and performance.

557. Acting for TV and Cinema. 5 hours.

Prerequisite: DRA 555.

Advanced work in the special problems of applying acting technique to the demands of the modern media. Practical work in class and in actual productions with the vocal and physical problems of dramatic material designed for TV and cinema.

560. Play Direction. 5 hours.

Prerequisite: Two senior division courses in drama or permission of department.

An introduction to the methods and procedures of the art of dramatic directing.

561. Play Direction Laboratory. 5 hours.

Prerequisite: DRA 560 or equivalent.

Course concentrates on the director's analysis of the script, the actor-director relationship and theatrical style. Each student directs a one-act play or short film.

563. Producing the New Script. 5 hours.

Prerequisite: Permission of department.

A course for directors, actors, and scriptwriters in the problems of producing the new script for stage, screen, or other media. Full collaboration of dramatic artists in producing a selection of new scripts by student writers.

564. Directing for the Cinema. 5 hours.

Prerequisite: DRA 560 or equivalent.

Lab-lecture course dealing with theories and

techniques of the art of directing dramatic cinema.

565. Directing Television Drama. 5 hours.

Prerequisite: DRA 560.

Advanced work in the special problems of applying directing technique to television drama. Theory and practical work in class and in commercial studios.

573. Seminar in Stage Costume Design. 5 hours.

Prerequisite: DRA 533.

Advanced problems in historical styles for theatrical costumes. Special problems of construction of costume elements are explored.

575. Seminar in Advanced Scene Design. 5 hours.

Prerequisite: DRA 535.

Advanced study of techniques and resources of scene design, dealing with principles and practices of rendering and composition, design research and styles of scene design.

576. Seminar in Advanced Stage Lighting. 5 hours.

Prerequisite: DRA 536.

Advanced study of theory and practice of lighting, dealing with advanced forms of circuitry and control equipment, design and execution of light plots for complex stage productions and methods of lighting applied in varying forms of theatrical presentation.

592. Creative Dramatics for Children. 5 hours.

A study of the principles and techniques of creating improvised drama with children.

594. Introduction to Children's Theatre. 5 hours.

A course in the theories and techniques of children's theatre. The production procedure, including play selection, play analysis, and directing techniques, will be emphasized.

ECONOMICS (ECN)

Students may major in economics in *either* the Franklin College of Arts and Sciences or the College of Business Administration. A.B. students majoring in economics and seeking advising should go to the Economics Department in Room 101, the College of Business Administration Building (Brooks Hall).

Course listings and descriptions can be found under the Economics section of the College of Business Administration.

ENGLISH (ENG)

Prerequisites. For courses numbered 231G through 399: ENG 102. For courses numbered 400 and above: two of the following — ENG 231G, 232G, 233G (or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum).

Freshman Placement Test. All entering freshmen must take the departmental placement test. Performance on this test places a student in ENG 100, 101, or 102. A student placing in 101 exempts 100 without credit. A student placing in 102 exempts 100 without credit and exempts 101 with 5 hours credit. Exemption of 101 or a grade of C or better in 101, and a combined average of C (2.0) in 101 and 102, are both required for graduation.

English Major. The English major consists of at least eight courses numbered 300 and above. Three of these courses must be in pre-19th-Century literature, and the other five may not be concentrated in one period or genre. A senior seminar is also required.

099R. Review of Written English. 3 institutional hours.

Prerequisite: Open to students who have not passed the Regents' Test.

Review of usage, sentence structure, mechanics of writing, diction, paragraph structure, and theme development. A refresher course in the elements of composition. May not be used for graduation credit.

100. Composition Practicum. 5 hours.

Intensive study of grammar, mechanics, punctuation, sentence structure, diction, and spelling combined with the writing and rewriting of paragraphs. Emphasis is on grammatically correct sentences and well-developed paragraphs which display a sense of unity and coherence. May not be used for graduation credit in some schools/colleges. Inquire of the appropriate dean for further information.

101. English Composition. 5 hours.

Prerequisite: Credit for ENG 100.

Expository themes on both general and literary topics developed by basic rhetorical methods.

102. English Composition. 5 hours.

Prerequisite: Credit for ENG 101 by the placement test or earned with a grade of C or better.

Themes on fiction, poetry, and drama.

105H. Composition and Literature (Honors). 5 hours.

Not recommended for students without credit

for ENG 101 or equivalent, and not open to students with credit for ENG 102.
Literary works as specimens of effective writing.

231G. Masterpieces of English Literature to 1700. 5 hours.

Masterpieces of English literature from the beginnings to 1700. This course provides 5 hours of credit towards an undergraduate literature-humanities requirement.

232G. Masterpieces of English Literature after 1700. 5 hours.

Masterpieces of English literature from 1700 to the present. This course provides 5 hours of credit towards an undergraduate literature-humanities requirement.

233G. Masterpieces of American Literature. 5 hours.

Masterpieces of American literature since 1800. This course provides 5 hours of credit towards an undergraduate literature-humanities requirement.

235H. Masterpieces of Literature in English (Honors). 5 hours.

Not open to students with credit for ENG 231G.

Prerequisite: ENG 102 or 105H.

Major works in British literature from the beginnings to 1700.

236H. Masterpieces of Literature in English (Honors). 5 hours.

Not open to students with credit for ENG 232G.

Prerequisite: ENG 102 or 105H.

Major works in British literature from 1700 to the present.

237H. Masterpieces of American Literature (Honors). 5 hours.

Not open to students with credit for ENG 233G.

Prerequisite: ENG 102 or 105H.

Major works in American literature since 1800.

301. Introduction to Folklore. 5 hours.

An introduction to folklore, including its definition, major fields and theories, and its relationships to other areas of learning, such as formal literature and history, music, the visual arts, anthropology and sociology.

302. Fantasy Literature. 5 hours.

An analysis of fantasy literature: its general characteristics, special qualities, and current popularity, including the works of one or more of the important fantasy writers and selected critical and theoretical works.

305. Lyric Poetry. 5 hours.

Types, techniques, and interpretations of poems selected from English and American literature.

323. Survey of Afro-American Literature. 5 hours.

Afro-American literature, chiefly of the 20th Century: Richard Wright, Langston Hughes, Ralph Ellison, James Baldwin, Chester Hines, and Leroi Jones, with side glances at lesser writers, at Negro folktales, and at recent African novelists.

330. Women in Literature. 5 hours.

Reading and analysis of works in British and American literature by and about women.

360. Advanced Composition. 5 hours.

Expository writing.

361. The Short Story. 5 hours.

The short story as a literary form.

380T. Creative Writing. 5 hours; repeatable for a maximum of 15 hours.

Prerequisite: Permission of department.

Emphasis upon poetry and fiction. No more than 10 credits total in ENG 380T and ENG 480T may be counted toward the English major.

400T. (LIN) History of the English Language. 5 hours.

The development of present English through the stages of Old English, Middle English, and early Modern English. Emphasis is placed on the growth of the vocabulary and changes in pronunciation, although grammatical changes receive some attention. Elementary phonetics and phonemics are studied in connection with sound change and dialectal variations in pronunciation.

402T. (LIN) Dialectology. 5 hours.

See LIN 402T.

404T. (LIN) The Structure of Black English. 5 hours.

See LIN 404T.

406T. (LIN) Old English. 5 hours.

The language and literature of England before the Norman conquest, with reading of selected texts.

411T. (LIN) English Grammar. 5 hours.

English grammar in the scholarly tradition of Curme and Jespersen.

413T. (LIN) English Grammar: Phonology and Morphology. 5 hours.

The phonological and morphological structure of Modern English.

415T. (LIN) Transformational Syntax. 5 hours.
See LIN 415T.

421T. Old English Literature. 5 hours.

Prerequisite: ENG(LIN) 406T.

Prose and poetry of the Old English period, exclusive of *Beowulf*, with emphasis on poetry. Works will be read in Old English, with supplementary translations.

422T. Beowulf. 5 hours.

Prerequisite: ENG(LIN) 406T or reading knowledge of Old English.

The poem in the original Old English, with attention to important critical studies.

423T. Non-Chaucerian Medieval Literature. 5 hours.

Masterpieces of medieval literature, primarily English. Most works will be read in Modern English translation.

424T. Chaucer. 5 hours.

Canterbury Tales, *Troilus and Criseyde*, and minor poems.

425T. Medieval Drama. 5 hours.

English drama from its beginnings to the opening of the public theater in 1576.

430T. Elizabethan Literature. 5 hours.

Poetry and prose of the earlier English Renaissance, such as works by More, Sidney, and Spenser, and Shakespeare's sonnets.

432G. Shakespeare: Part I. 5 hours.

The early plays.

433G. Shakespeare: Part II. 5 hours.

The later plays.

434T. Renaissance Drama. 5 hours.

English drama from 1576 to 1642 exclusive of Shakespeare, emphasizing dramatists such as Marlowe, Jonson, Webster, and Middleton.

435T. 17th-Century Poetry. 5 hours.

Major English poets of the period, such as Donne, Jonson, Herbert, and Marvell.

436T. 17-Century Prose. 5 hours.

Works of fiction and non-fiction by major writers of the later English Renaissance, such as Donne, Bacon, Hobbes, Browne, Milton, and Bunyan.

437T. Milton. 5 hours.

The works and times of John Milton.

440T. Restoration and 18th-Century English Drama. 5 hours.

Outstanding dramatists of the period: Dryden, Wycherly, Addison, Goldsmith, Sheridan, and others.

442T. Early 18th-Century Prose and Poetry. 5 hours.

Poetry and prose of the earlier 18th Century, emphasizing Addison, Steele, Defoe, Swift, and Pope.

443T. The 18th-Century English Novel. 5 hours.

The English novel from Defoe to 1800, including novels by Richardson, Fielding, Smollett, and Sterne, the Gothic novel, and the novel of purpose.

444T. The Age of Johnson. 5 hours.

English literature of the late 18th Century, emphasizing Johnson, Boswell, and Blake.

450T. Early Romantic Literature. 5 hours.

Wordsworth, Coleridge, and other writers.

451T. Later Romantic Literature. 5 hours.

Byron, Shelley, Keats, and other writers.

452T. The 19th-Century British Novel. 5 hours.

The development of the British novel in the 19th Century.

453T. Victorian Poetry. 5 hours.

Tennyson, Browning, and Arnold.

454T. Victorian Prose. 5 hours.

A study of the major Victorian prose writers, chiefly Carlyle, Newman, Mill, Ruskin, and Arnold.

465T. (DRA) Modern Drama. 5 hours.

The drama of Europe and America from the realism of Ibsen and Strindberg to the present.

466T. 20th-Century British Poetry. 5 hours.

British poetry since the 1890's.

467T. The 20th-Century British Novel. 5 hours.

Fiction of such representative British novelists of the 20th Century as Bowen, Conrad, Forster, Joyce, Lawrence, Waugh, Woolf, and Greene.

468T. Modern Irish Literature. 5 hours.

Fiction, poetry, and drama of the Irish Renaissance and after.

470T. Early American Writing. 5 hours.

American literature from the beginning through Irving.

471T. American Romanticism. 5 hours.

Representative works of the Romantics and Transcendentalists, with emphasis on Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, and Dickinson.

472T. American Realism and Naturalism. 5 hours.

Representative work of the realists and naturalists, with emphasis on James, Clemens, Crane, Norris, and Dreiser.

473T. American Poetry to 1900. 5 hours.
A study of representative poets from Edward Taylor through Stephen Crane.

474T. The American Novel to 1900. 5 hours.
The works of major novelists from Cooper through Norris.

475T. Southern Literature. 5 hours.
Literary achievement in the South from 1610 to the present, with emphasis upon Poe, Clemens, and Faulkner.

476T. 20th-Century American Poetry. 5 hours.
American poetry from the Imagist Movement to the present.

477T. The 20th-Century American Novel. 5 hours.
The American novel since World War I.

480T. Advanced Creative Writing. 5 hours.
Prerequisite: Two courses in English numbered 400 or above, at least 5 hours of ENG 380T, and permission of department, based upon student's work submitted in advance.
Advanced instruction in the craftsmanship of poetry and fiction writing. No more than 10 credits total in ENG 380T and ENG 480T may be counted toward the English major.

481T. History of Literary Criticism. 5 hours.
A survey of literary theory from Plato to the early modern period, examining changing concepts of genre, style, and the social function of literature.

483T. Practical Criticism. 5 hours.
A critical examination of literary texts with parallel readings in historical criticism.

496H, 497H, 498H. Independent Reading and/or Projects (Honors). 5 hours each.
These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.
This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

ENTOMOLOGY (ENT)

A major in Entomology is available to undergraduate students through the College of Arts and Sciences and the College of Agriculture. Emphasis is placed upon preparing the student for employment as a professional entomologist or for graduate study. Lower division requirements are those listed for the College of Arts and Sciences B.S. curriculum. Major

requirements include: ENT 325-325L, 393, 460-460L, either 384-384L or 401-401L or 415-415L, and MIB 350-350L, BIO 350. Consult Entomology undergraduate advisor for information.

201. Insects and Man. 5 hours.
Designed to acquaint the non-biology major with our dependence on and interaction with insects in today's world.

250-250L. The Hive and the Honey Bee. 5 hours.
Three lectures and one 3-hour lab period.
Prerequisite: BIO 102-102L and ENT 325-325L are recommended.

A study of the behavior, life history and seasonal activities of honey bees. The relation of honey bees as the major pollinator of economically important plants will be discussed. Special attention will be given to theory and practice of apiary management.

325-325L. General Entomology. 5 hours. Three lectures and two 2-hour lab periods.
Prerequisite: BIO 102-102L.

An introduction to insects: the anatomy, physiology, habits and classification of important groups will be emphasized. The importance of insects as competitors for food, and their role in the ecosystem will be stressed.

374-374L. Agricultural Entomology. 5 hours. Three lectures and two 2-hour lab periods.
Prerequisite: BIO 102-102L.

A brief introduction to entomology followed by a study of the recognition and control of insect pests of crops and animals. An introductory course designed for non-entomology majors.

376-376L. Medical Entomology. 5 hours. Three lectures and two 2-hour lab periods.

A brief introduction to entomology followed by a study of the species of insects and related arthropods of particular importance in the cause or transmission of diseases of man and lower animals.

382-382L. Forest Protection: Entomology. 3 hours. Two lectures and one 2-hour lab period.
An introduction to insects of forest trees: identification, biology and management.

384-384L. Urban and Industrial Entomology. 5 hours. Three lectures and two 2-hour lab periods.
Prerequisite: ENT 325-325L and 374-374L or 376-376L or 382 or BIO 102-102L.

A study of the recognition, biology and control of insect pests and other arthropod forms which infest areas inhabited by man.

390. Special Problems in Entomology. 1-5 hours.

Prerequisite: Permission of department.

A course designed to permit interested and well-prepared undergraduate students to pursue an entomology problem approved by the staff member under whom the work will be done.

393. Entomology Undergraduate Seminar. 1 hour; may be repeated once.

Prerequisite: ENT 325-325L or equivalent.

Selected entomological topics of current and special interest by invited speakers and student presentations. Required for the entomology major but open to students in related fields.

401-401L. Insect Taxonomy. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ENT 325-325L.

The principles of taxonomy with practice in the classification of all orders of insects.

415-415L. Insect Physiology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: One course in organic chemistry and ENT 460-460L; one of the following courses: BIO 330, BOT 380-380L, or ZOO 390-390L or equivalent.

An introduction to the general physiological processes and functions of the various organ systems of insects.

440-440L. Insect Behavior. 5 hours. Three lectures and one 3 to 4-hour lab period.

Prerequisite: ENT 325-325L.

An evolutionary approach to the principles of behavior with emphasis on reproduction, mimicry, insect-plant interactions and the development of sociality.

450-450L. Agricultural Insect Ecology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: One senior division course in entomology.

Study of basic ecological principles as they apply to insect pest management. Emphasis is on pest population regulation and agricultural ecology.

455-455L. Advanced Honey Bee Biology and Apiculture. 5 hours. Two lectures and three 2-hour lab periods or demonstrations.

Prerequisite: ENT 250-250L or equivalent, or permission of department.

A course designed to provide the student with practical experience in all phases of colony manipulation, management and disease control.

460-460L. Insect Morphology. 5 hours. Two lectures and three 2-hour lab periods.

Prerequisite: ENT 325-325L.

An introduction to insect structure and phylogeny.

474-474L. Applied Systems of Insect Control. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ENT 374-374L or permission of department.

Description of the major applied insect control techniques excluding insecticidal. Discussion of the advantages and limitations of these techniques including practicality, economics, environmental impact, etc. Final portion of the course will consider integrated control systems for development of a pest management program.

477-477L. Chemistry and Toxicology of Insecticides and Fungicides. 5 hours. Three lectures and two lab periods.

Prerequisite: One course in organic chemistry and one of the following entomology courses: 374-374L, 376-376L, or 382.

A study of the biology, use, metabolism, residue analysis, and impact of insecticides and their alternatives in agriculture and in the environment.

482-482L. Entomology in Natural Resources Management. 5 hours. Three lectures and one 3-hour lab period.

A study of arthropods which are important in forest resources management, including timber, wildlife, and recreation.

494-494L. Aquatic Entomology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ENT 325-325L or equivalent.

An introduction to taxonomy, life history and ecology of aquatic insects. (Offered Spring quarter, even years.)

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

GEOGRAPHY (GGY)

All majors should include in their core curriculum GGY 101, 102, or 215H; GGY 120-120L and 121-121L or 122-122L; and a statistics course.

Requirements, in addition to those listed for the College of Arts and Sciences, for the A.B. and B.S. in Geography include: GGY 350, 358, and one of the 400-level regional geography courses. For the B.S. degree, the remaining 25 hours must be completed in upper division physical geography courses.

Requirements for the joint B.B.A./Industrial Geography degree are listed in the College of Business Administration Combined Major program.

Human and Regional Geography

A major selected primarily from the following courses leads to an A.B. degree.

101. Geography of the Developed World. 5 hours.

A survey of the technologically advanced nations of the world emphasizing the resources, culture characteristics, and economic activities of each region.

102. Geography of the Underdeveloped World. 5 hours.

A regional survey of the less technologically advanced regions of the world emphasizing problems of economic development and sociodemographic patterns.

215H. World Cultural Geography (Honors). 5 hours.

Not open to students with credit for GGY 101 or 102.

Identification of and use of basic geographic concepts in analysis of social, economic, and political problems at local, regional, and worldwide scales. Field observations provided in field trips.

320. United States and Canada. 5 hours.

Prerequisite: Sophomore standing.

A topical and regional analysis of the U.S. and Canada, designed to bring students to a fuller understanding of their environs. Physical environment, population, culture, economy and government are considered in their regional contexts. Adjustment strategies in a time of rapid change are explored. Not for major credit in geography.

341. Problems in Political Geography. 5 hours. Structure and function of political regions with emphasis on the sovereign state. Sources of national strength, internal conflict, and problems in international relations. Examples from recent developments and current situations.

358. Economic Geography. 5 hours.

Prerequisite: GGY 101, 102 or ECN 105 or 115H.

Location factors and principles, utilizing theoretical and empirical studies. Focus upon the spatial organization of economic production, consumption, and exchange systems.

399. Internship in Geography. 5-15 hours.

Prerequisite: Completion of at least 30 hours of courses in 300 series, GGY 350 and 358.

Students will be placed in an outside private or governmental agency where they will utilize geographic techniques in approaching practical problems relevant to the agency's mission. An initial orientation and a post-internship evaluation with the internship committee is required. The latter will include both a written and oral presentation of the intern's activities.

412. Geography of Development. 5 hours.

Prerequisite: 10 hours in geography or an equivalent background in related disciplines.

An examination of the geographical aspects of development ranging from consideration of the neighborhood to large regions and countries. The spatial characteristics of developmental processes are viewed at the conceptual level and reinforced by selected field projects.

426. Field Methods in Human Geography. 4 hours.

Prerequisite: 15 hours in geography courses numbered above 200, including GGY 350.

Introduction to methods used in human geography to identify, classify, measure and record basic field information; includes training in land use classification, mapping and preliminary analysis. Methods include reconnaissance, tabulation, field mapping, counting, interviewing, coding and card-punching. Data are carried through preliminary analysis, and findings reported in oral, written, map, and print-out form.

436. Geography of the South. 5 hours.

Prerequisite: 10 hours in courses from one of the following departments: geography, history, or economics.

Geographical appraisal of the southeastern states, including physical and human resources, settlement and population, agriculture, the extractive industries, transportation and present urban settlements. Current progress and major problems in southeastern development.

438. Historical Geography of Eastern North American to 1783. 5 hours.

Prerequisite: 10 hours in history or geography, or an equivalent background in anthropology or archaeology.

Evolution of settlement systems and their distributions in pre-Revolutionary North America; modifications in natural landscapes and resources as the colonial cultural landscape developed. Comparative geography of the early regions of eastern North America.

439. Historical Geography of Eastern North America, 1783-1860. 5 hours.

Prerequisite: 10 hours in history or geography, or an equivalent background in anthropology or archaeology.

Expansion settlement systems and their distribution into the trans-Appalachian regions during the early 19th Century. Comparative geography at mid-19th Century of the regions of eastern North America.

441. Caribbean America. 5 hours.

Prerequisite: 10 hours in geography or an equivalent background in Spanish, history, economics, or anthropology.

A regional analysis of the Caribbean area with emphasis upon the physical, cultural and economic factors affecting man's use of his resources.

442. South America. 5 hours.

Prerequisite: 10 hours in geography or an equivalent background in either Spanish or history.

A regional analysis of the geography of equatorial and southern South America including physical, cultural, and economic characteristics of the several regions. Stress upon prospects for expansion of settlement, developments of resources and growth of industries.

444. Europe and the Mediterranean. 5 hours.

Prerequisite: 10 hours in geography, or in history, political science, or modern languages.

A regional analysis of Europe, exclusive of the Soviet Union, designed to reveal the unique cultural, physical and economic character and problems of the several European nations.

446. Geography of the Soviet Union. 5 hours.

Prerequisite: 10 hours in geography or an equivalent background in history, or political science or economics.

A systematic and regional analysis of the industrial, agricultural, urban, population, and physical geography of the USSR. Designed to evaluate, within the framework of the state's ideology and centrally-controlled planned economy, its spatial organization and consequent economic and political strengths and weaknesses.

447. Geography of China. 5 hours.

Prerequisite: 10 hours of geography or related social sciences or area studies.

A systematic and regional analysis of the physical and human geography of contemporary China. Emphasis is on modernization and development of agriculture, industry, and transportation within the context of China's resource base and large population.

448. Geography of East and Southeast Asia. 5 hours.

Prerequisite: 10 hours of geography or 10 hours in the culture or language of the region.

A systematic and regional analysis of the physical and human geography of East and Southeast Asia (excluding China, see GGY 447). Major focus on resources, land utilization, population characteristics and distributions as they relate to economic and political problems. Emphasis is on Japan, Korea, Indonesia, Philippines, and IndoChina.

453. (ANT) Urbanization in Developing Countries. 5 hours.

See ANT 453.

459. Urban Geography. 5 hours.

Prerequisite: Two courses from GGY 350, 358, or ECN 133.

Analysis of urban land occupancy and its morphological-functional aspects. Introductory location theory in urban areas. Procedures in geographical analysis of agglomerated settlements.

460. Industrial Geography. 5 hours.

Theories in industrial location. Detailed locational analysis of selected manufacturing industries. Regional treatment of the spatial structure of North American manufacturing.

461. North American Rural Land Use. 5 hours.

Prerequisite: 10 hours from GGY 350, 358, 459, 460; or 10 hours in 300-level courses from economics, botany or agronomy approved by department.

Regional analysis of climate, soils, landform bases of American agriculture. Origins and dispersals of cultivated plants and livestock; American systems of rural land use and settlement in their regional settings. Contemporary problems in land use and its geographical analysis.

463. Geography of Transportation. 5 hours.

Prerequisite: GGY 358 or MKT 559.

Survey of historical, engineering and economic aspects of North American transport. Influence of modal characteristics on economic phenomena. Survey of regional commodity movements at various scales.

Principles and theories explaining role of transportation in regional planning, and in location of economic and political phenomena.

468. Urban Transportation and Land Use. 5 hours.

Prerequisite: GGY 459 or MKT 559.

Reciprocal relations between urban transportation, both freight and passenger, and urban land use organization in terms of site requirements, traffic generation characteristics and circulation problems.

472. Geography of World Population Distribution. 5 hours.

Prerequisite: 10 hours in geography or permission of department.

A description of contemporary patterns in world and continental distributions of people and locational analyses of these patterns and their changes.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

502. Principles in Regional Geography for Teachers. 5 hours.

Prerequisite: 10 hours in geography or two years of teaching experience.

A course designed to inculcate principles and concepts in regional geography through intensive analysis of regions selected on a world-wide basis.

Physical Geography and Techniques

A major selected primarily from the following courses may lead to either the A.B. or B.S. degree.

104. Earth Science Survey. 5 hours.

Not open to students with credit for either GGY 120-120L, 121-121L or 122-122L.

An introduction to physical geography, surveying climate, vegetation, soils, landforms, and water resources in their areal interrelations and distributions.

120-120L. Introductory Weather and Climate. 5 hours. Three lectures and two lab periods.

Components of weather, weather processes, and their measurement. Climatic elements

and their control factors. Geographic classification of climatic and vegetative types on the earth's surface.

121-121L. Introduction to Landforms. 5 hours. Three lectures and two lab periods.

Introductory analysis and classification of major types of land surfaces, stressing geographic characteristics. Study and interpretation of relationships between landforms and other phenomena through maps, air photos, and field observations. World coverage with stress on North America.

122-122L. Introduction to Bio and Soil Geography. 5 hours. Three lectures and two lab periods.

Analysis of world variation and distribution of vegetation and soils and the special climates associated with these distributions. Also studied are the distributions of some related animal populations. Field trips provide first-hand information.

214H. World Physical Geography (Honors). 5 hours. Not open to students with credit for GGY 120-120L, 121-121L, or 122-122L or 104.

Study of processes of weather, climate and landforms; analysis of relationships among climate, landforms, vegetation, soils and water; assessment of broad patterns of these phenomena on the earth. Field observation provided in field trips.

350. Cartography and Graphics. 5 hours. Five lab periods.

Introduction to methods of preparing maps, charts and diagrams. Cartographic theory and techniques; use of basic cartographic equipment; compilation of, symbolization on and design of drawings; methods of map reproduction.

399. Internship in Geography. 5-15 hours.

(See description in Human and Regional Geography.)

400. Advanced Terrain Analysis. 5 hours.

Prerequisite: GGY 121-121L or GLY 125-125L, or permission of department.

Identification of terrain parameters, their quantitative expression and areal variations. Emphasis on small stream basin analysis, and fluvial morphology.

401. Microclimatology. 5 hours.

Prerequisite: GGY 120-120L or permission of department.

Physical basis for microclimatological analysis including solar and longwave radiation, the energy balance and water budget. Procedures for evaluating the ground, latent (evaporative) and sensible heat fluxes. Ex-

amination of the resulting microclimates of natural environments (non-vegetated and vegetated including forests) and man-modified environments (agricultural, urban, buildings). Term project required.

402. North American Physiography. 5 hours.
Prerequisite: GGY 121-121L or GLY 125-125L or permission of department.

Detailed analysis of North American physiographic provinces, their subdivisions, geomorphic features, geographic relationships.

403. Introductory Spatial Analysis. 5 hours.
Prerequisite: GGY 350 and STA 200 or permission of department.

Introduction to techniques used to study the patterns of points, lines, areas, and surfaces depicted on maps. Use of parametric and non-parametric statistical techniques to describe and make inferences from information contained on maps.

406. Regional Synoptic Meteorology. 5 hours.
Prerequisite: GGY 120-120L or permission of department.

Investigation of the dynamics and general circulation of the atmosphere including analyses of surface-upper atmosphere links. Tropospheric waves, vorticity influences, jet streams, cyclogenesis, tropical depressions, hurricanes. Implications for long-range forecasting; geographic expressions of mean tropospheric wave patterns. As a synthesis, examination of regional climatic patterns and anomalies throughout the world. Term project required.

408. Quaternary Paleoclimatic Geomorphology. 5 hours.

Prerequisite: GGY 121-121L or GLY 125-125L and GGY 400 or equivalent, or permission of department.

The geomorphic, isotopic and palynological evidence of Quaternary paleoclimates is examined and chronology problems discussed. The effects of past climatic changes upon present landscapes are evaluated. Attention is given to short-term fluctuations in temperature and precipitation that have occurred in historic times and to possible explanations for climatic change.

409. Bioclimatology. 5 hours.
Prerequisite: GGY 120-120L or 122-122L or permission of department.

In this course the interaction of climate with organisms, communities and ecosystems is discussed and then demonstrated in the field. The mechanisms of heat flow, radiation exchanges and water vapor flux; environmental

variables in time and space are investigated, as well as the basic statistics needed to deal with climatic data. Case studies are examined which demonstrate climate's specific role in the functioning of ecosystems. Attention is directed to the use of bioclimatic methods to improve environmental impact assessment.

410. Conservation Ecology and Resource Management. 5 hours.

Prerequisite: Permission of department.

An ecologic and economic analysis of the interaction of man and environmental resources within different cultural and geographical contexts with emphasis on environmental quality, planning and decision making. The ecosystem concept is the basic framework for the course, and the major ecosystems of the earth are viewed as discrete resources.

413. Biogeography. 5 hours.

Prerequisite: GGY 122-122L or permission of department.

Patterns of plant and animal distribution in the contemporary landscape are stressed, including detailed treatment of species ranges, diversity relations, factors influencing the geography of plant and animal assemblages, and gradient analysis techniques. Consideration of successional theory, disturbance, and human-biota interactions promote awareness of landscape dynamics. Weekend field trips and field exercises required.

416. Cartographic Design and Reproduction. 5 hours. Three lectures and two lab periods.

Prerequisite: GGY 350 or permission of department.

Principles of design, readings from the literature, map reproduction methods and their effects on design. Practice in the production of thematic maps from the collection of data to their final form; use of advanced instruments.

419. Computer-Assisted Cartography and Graphics. 5 hours.

Prerequisite: GGY 350.

Introduction to the theory and application of computer technology in the preparation of thematic maps and other graphics. Emphasis is placed on the creation, analysis, and display of statistical surfaces. Students experiment with existing computer mapping programs and develop their own cartographic software in certain instances.

420-420L. The Use and Interpretation of Aerial Photographs. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Four or more quarters of geog-

raphy, geology, environmental design, forestry, agriculture, or permission of department. Principles of air photo interpretation and photogrammetry. Use of photos and photogrammetric instruments in planimetric, topographic and type mapping; in remote-sensing; in making measurements and inventories; in sampling; and in planning. Project work involves the interpretation of terrain, vegetation and culture.

422. Advanced Photogrammetry. 3-5 hours. Lecture and laboratories arranged as required. Prerequisite: GGY 420-420L.

Directed work on practical photogrammetric problems. Mastery of photogrammetric techniques and instruments as related to earth science applications.

423. Remote Sensing of Environment. 5 hours. Prerequisite: PCS 128-128L, GGY 420-420L, or permission of department.

A consideration of the principles of remote sensing with emphasis on aerospace applications in the natural sciences. A review of fundamental properties of the electromagnetic spectrum followed by studies of remote sensing devices such as multispectral cameras, thermal infrared line scanners, and television and radar imaging systems. The course is oriented toward the particular interest of participating students.

425. Field Methods in Physical Geography. 4 hours.

Prerequisite: 15 hours in geography including GGY 350 or equivalent.

Methods in measurement, observation, recording and synthesis of field data in physical geography. Students conduct field research and present oral and written reports (with maps) of findings.

429. Special Problems in Area Analysis. 1-5 hours.

Prerequisite: 15 hours in courses numbered above 300 in geography. Permission of department must be obtained for admission to this course prior to registration.

476. (BOT) Plant Geography. 5 hours.

See BOT 476.

GEOLOGY (GLY)

The major in Geology includes at least 40 quarter hours of Geology courses. Required Geology courses are GLY 321, 323, 332, 403, 404, 405, 408; the remaining major hours — and some elective hours — can be fulfilled by other 400-level Geology courses. CHM

121 and 121L and 122 and 122L, PCS 127-127L and 128-128L, MAT 254 or STA 421, and a Geology field course are specific requirements; since CHM 121 and 121L and GLY 125-125L and 126-126L are prerequisites to some major courses, they are best taken during the student's freshman or sophomore year.

105. Geology for Elementary Teachers. 5 hours.

A self-paced, modular course. A laboratory-centered study of basic principles in geology designed for prospective elementary school teachers. The course utilizes modular and self-paced instruction. Enrollment is limited to students in the College of Education majoring in Early Childhood, Middle School, or Elementary Education.

115-115L. Earth Processes and Resources. 5 hours. Four lectures and one laboratory period.

Origin, distribution, and utilization of mineral, energy, and water resources. Processes of landform development. Continental drift and mountain building. Prediction and control of earthquakes and other geologic hazards. Geology of Georgia, North America, and the terrestrial planets. May not be used to fulfill the science-sequence requirement of the B.S. degree in Arts and Sciences.

116-116L. The Earth Through Time. 5 hours. Four lectures and one laboratory period.

Prerequisite: GLY 115-115L.

Origin and evolution of Earth, its atmosphere, oceans, and life. The changing Earth: a record of continental drift, mountain building, volcanism, erosion, and sedimentation. Fossils, ancient environments, and evolution of life. Pre-historic man. May not be used to fulfill the science-sequence requirement of the B.S. degree in Arts and Sciences.

125-125L. Physical Geology. 5 hours. Three lectures and two lab periods.

Not open to students with credit for GLY 115-115L.

Fundamentals of physical geology: characteristics and origins of rocks and minerals; mechanisms and processes of volcanism, plutonism, metamorphism, weathering, erosion, sedimentation, and lithification; evolution of landforms. Tectonic processes of continental drift, sea-floor spreading, and plate tectonics. Emphasis on scientific methods.

126-126L. Historical Geology. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 125-125L.

Methods and concepts by which Earth history is interpreted. The geologic time scale; in-

teractions of physical, chemical, and biological processes through time. Origin of life; evolution and distribution of plants and animals; the geologic time scale. Geologic history of North America. Emphasis on interpretation of the rock record.

235H. Physical Geology (Honors). 5 hours. Three lectures and two lab periods.

Not open to students with credit in GLY 125-125L.

Characteristics and origins of minerals and rocks. Structure of the Earth's interior. Geologic processes that affect the Earth's surface. Volcanism, earthquakes, and other geologic hazards. Plate tectonics and mountain building. Earth resources.

236H. Historical Geology (Honors). 5 hours. Three lectures and two lab periods.

Not open to students with credit in GLY 126-126L.

Prerequisite: GLY 125-125L or 235H.

Measurement of geologic time. Physical and biological history of Earth as recorded in rocks and fossils. Development of the major features of Earth, with particular emphasis on North America.

301. Gems and Gem Materials. 5 hours.

Gem materials; historical, cultural, mineralogical, technological, and scientific aspects. The identification and evaluation of gems.

302. Mineral Resources and the Environment. 5 hours. Five lectures plus field trips.

Historical influence of mineral resources. Energy resources and domestic energy policy. Mineral economics, environmental problems, and sufficiency of mineral resources. Resource recovery and future mineral technologies.

303. Elementary Oceanography. 5 hours.

Introduction to oceanography, especially its geologic and biologic aspects. Origin, development and major physiochemical properties of marine waters, basins, sediments, and mineral resources. Classification of marine environments. Overview of interdisciplinary relationships. This course may not be used in sequence to satisfy the physical science requirement for the A.B. degree.

304. History of Life. 5 hours. Five lectures plus field trips.

Not open to geology majors.

The record of fossils. Past and present diversity of life. Evolutionary development and geologic history of plants and animals. Broad features of ancient marine and terrestrial environments and their effects on the life of the past. (Spring quarter.)

311. Continental Drift. 5 hours. Five lectures and a field trip.

Prerequisite: Junior standing or permission of department.

Historical development of the concept of continental drift. Mechanisms of sea-floor spreading and plate tectonics. Understanding Earth history in the context of continental drift. Possible consequence of continued continental movements.

312. Geologic Hazards. 5 hours. Five lectures and a field trip.

Prerequisite: Junior standing or permission of department.

Evaluation of geologic conditions which are potential hazards to mankind (earthquakes, faulting, volcanic eruptions, erosion, landslides, flooding, etc.) and resources which may be adversely affected by man's activities (groundwater contamination, disposal of wastes, etc.). Discussion of case histories illustrate techniques of prediction and control of geologic hazards.

313. Geology of National Parks. 5 hours. Five lectures and a field trip.

Prerequisite: Junior standing or permission of department.

Classic geologic processes and features within the National Park system: Volcanism, meteorite impact, and glaciation. Canyons, mountains, and seashores. Geysers, waterfalls, caves, and sand dunes. Vestiges of life: jellyfish, fossil forests, dinosaurs.

314. Geology of the Planets. 5 hours.

Prerequisite: Junior standing or permission of department.

Geology and the space program. Geologic processes, features, and evolution of the Moon, Mars, Mercury, Venus, and Earth. The search for extraterrestrial life.

321. Introduction to Mineralogy and Crystallography. 5 hours. Two lectures and three lab periods.

Prerequisite: CHM 121.

Physical and chemical properties of minerals, their rock-associations, modes of occurrence, industrial uses. Properties of crystals, crystal systems and their geometrical characteristics.

323. Petrology. 5 hours. Two lectures and three lab periods.

Prerequisite: GLY 321.

Characteristics of the common igneous, sedimentary, and metamorphic rocks. Their classification and field identification.

332. Structural Geology. 5 hours. Four lectures and one lab period.

Prerequisite: GLY 125-125L; 323 recommended.

Geologic structures and their recognition in the field. Framework of the earth's crust; origin of mountains, continents, oceans. Physical properties and behavior of rocks; solution of structural problems.

403. Invertebrate Paleontology. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 126-126L or BIO 102-102L. Principles of invertebrate paleontology. Study of fossil specimens, emphasizing relationships between living and extinct marine organisms. Classification and history of major invertebrate phyla.

404. Geology Seminar. 1-6 hours.

Reviews and discussions of classical studies; lectures on current research, new developments in the field. Special lectures by visiting scientists.

405. Sedimentation and Stratigraphy. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 126-126L; 323 recommended. The origin and distribution of sedimentary rocks. Environmental conditions involved in the transportation and deposition of sediments. Vertical sequences and lateral correlations in layered rocks. Typical stratigraphic associations.

407. Geology of the Southern States. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 125-125L and 126-126L. Structural and stratigraphic relationships in southern geology, analyzed in terms of distribution, lithology, and economic implications.

408. Optical Mineralogy. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 321 or equivalent. Determination of the optical properties of minerals with the petrographic microscope. Identification of the common rock-forming minerals using oil immersion and thin-section techniques. Introduction to the petrographic description of rocks.

409. Marine Geology. 5 hours.

Prerequisite: GLY 125-125L and 126-126L. Study of the geologic aspects of ocean basins, including morphology, sedimentation processes, and mode of origin.

411. Principles of Geochemistry. 5 hours.

Prerequisite: CHM 122 and 122L and GLY 323. Composition of the earth. Distribution of elements in minerals and rocks. Principles governing the migration and concentration of elements. Introduction to nuclear geology and geochemical prospecting.

414. X-Ray Crystallography. 5 hours. Three lectures and two lab periods.

Prerequisite: MAT 253.

Symmetry elements, crystal projections, point groups, space groups, crystal systems, crystal notation, optical goniometry. Determination of cell dimensions and space group; X-ray powder methods, single-crystal X-ray methods.

415. Applied Oceanography. 5 hours. Lectures and field excursions.

Prerequisite: CHM 121 and 121L, PCS 127-127L, MAT 253.

Examination of physical, chemical, geological, and biological aspects of marine environments, emphasizing the application of principles and methods of solving specific problems in marine science. Lectures, data analysis, and field trips focus upon research problems currently being investigated in Georgia waters.

416. Coastal Geology of Southeastern United States. 3 hours. Lectures and regional field trip.

Prerequisite: GLY 405 and 409.

Lectures and field studies on the geologic history and development of Quaternary coastal and nearshore features of the southeastern states. Major emphasis on field excursion to selected rock exposures and present-day depositional environments, including Florida Keys, scheduled during break between Winter and Spring Quarters; written report required.

418. Applied Structural Geology. 3 hours. Two lectures and three lab periods.

Prerequisite: GLY 323 and 332 and 408.

Structural geology required for field-oriented research, including: techniques used in interpretation of folds and faults; recognition, description, and interpretation of rock fabric; interpretation and preparation of geologic maps; discussion of tectonic regimes and structural associations.

419. Geological Data Analysis. 5 hours.

Prerequisite: GLY 437 or equivalent, or permission of department.

Analysis of geological data with emphasis on statistical methods. Geological trends, multivariate data analysis, ratios and variables of constant sum, the lognormal distribution, exploratory data analysis, simulation. Selected problems in theoretical and applied geology.

422. Hydrogeology. 5 hours.

Prerequisite: GLY 125-125L and 126-126L or equivalent.

The hydrologic cycle and review of the quantitative treatment of its elements. Quan-

titative methods for ground-water flow, open-channel flow, sediment transport, channel characteristics, and drainage networks. Introduction to water chemistry and quality. Water as a resource. (Surface hydrography is covered in detail in FRS 411.)

425. Field Methods in Geology. 2 hours.

Prerequisite: 15 hours in geology courses numbered above 200 plus at least a B average in junior/senior major courses.

Theory and practice of field measurement, large scale planimetric and topographic mapping, and grid surveying. Graphic presentation of field data.

426. Geologic Mapping of Saprolite. 3 hours. One lecture and two lab periods.

Prerequisite: GLY 323.

The weathering processes of saprolitization. The recognition of parent rock by the field examination of saprolite. Geologic mapping in deeply weathered terrains. Preparation of a geologic map.

427. Geology Field School. 5 hours. Five field weeks in June and early July.

Prerequisite: GLY 321, 323, 332; GLY 405 recommended.

Introduction to geologic mapping techniques: training in the use of aerial photographs, topographic maps, and stereographic projections; basic methods of description and measurement of stratigraphic sections. Regional geologic settings stressed through reports which accompany field maps.

429. Ocean Technology. 3 hours.

Prerequisite: GLY 409 or permission of department.

A review of technology currently being applied by the academic, governmental, and industrial communities for exploration and development of marine resources.

430. Clay Mineralogy. 4 hours. Three lectures and one lab period.

Prerequisite: GLY 321, 405; CHM 121 and 121L. Structures and properties of clay minerals. Effects of environmental factors on their origin and uses. Identification of clay minerals by optical and X-ray methods.

431. Metallic Ore Deposits. 5 hours. Five lectures plus field trips.

Prerequisite: GLY 321 and 332.

Classification and origin of metallic ore deposits; relationships between mineral deposits and host rocks; ore controls. Discussion of the major deposits of base metals, precious metals, and ferrous metals.

432. Industrial Rocks and Minerals. 5 hours. Four lectures, one lab period plus field trips. Prerequisite: GLY 321 and 332.

Classification and origin of industrial rocks and minerals. Relationships between deposits and formative geologic processes. Emphasis on resources important in domestic and international trade. Economics of exploration and development.

436. Exploration and Evaluation of Ore Deposits. 5 hours. Four lectures and one lab period.

Prerequisite: GLY 321 and 332.

Exploration methods. Surface expression of buried ore deposits. Planning of drilling programs. Computation and presentation of ore reserves. Exploitation methods. Mine valuation and financing.

437. Geostatistics. 5 hours. Four lectures and one lab period.

Prerequisite: STA 200 or 421.

Statistics applied to geology. Distributions, sampling, inference, analysis of variance distributions and transformations, geological sampling, variability in geological data.

438. Geology of Energy Resources. 5 hours. Four lectures, one lab period plus field trips.

Prerequisite: GLY 332 and 405.

Origin and occurrence of principal geologic energy resources: petroleum, coal and uranium. Discussion of tar sands, oil shale, synthetic hydrocarbons from coal, and geothermal steam. Emphasis on major deposits, reserves, exploration practices, production methods, economics, and environmental consideration. Domestic energy policy.

441, 442, 443. Introduction to Research. 2-5 hours each.

- A. Mineralogy
- B. Geochemistry
- C. Geophysics
- D. Oceanography
- E. Petrography
- F. Petrology
- G. Stratigraphy
- J. Paleontology

An introduction to the literature of geology, research procedures, and instrumental techniques.

444. Principles of Chemical Mineralogy. 5 hours.

Prerequisite: CHM 122 and 122L; MAT 254; PCS 128-128L.

The study and application of thermochemical principles and methods to problems in mineralogy, petrology, and geochemistry.

451. Micropaleontology. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 126-126L or BIO 102-102L. Morphology and systematics of principal groups of animal microfossils. Stratigraphic, paleoecologic, and phylogenetic relationships, with particular emphasis on Foraminifera.

452. Introduction to Paleoecology. 5 hours. Four lectures and one lab period.

Prerequisite: GLY 403 or equivalent. Study of factors governing the abundance and distribution of ancient organisms, with emphasis on marine invertebrates. Comparisons with ecology of extant organisms. Survey of ecologic principles, adaptations of organisms, and environmental parameters. Preservability and taphonomy of organisms. Paleoecology as a tool in sedimentary geology.

453. (ZOO) Vertebrate Paleontology. 5 hours. Three lectures and two lab periods plus field trips.

Prerequisite: ZOO 326-326L or GLY 126-126L. The evolution of vertebrate animals as seen in the fossil record, with emphasis on their relationships, ecology, and functional morphology.

455. Introduction to Trace Fossils. 4 hours.

Prerequisite: GLY 403 and 405. Origin, classification, and environmental significance of trace fossils. Organism-substrate relationships; physical and biogenic sedimentary structures. Organisms as geologic agents. Emphasis on marine invertebrate traces and tracemakers.

456. Marine Paleoecology and Taphonomy. 5 hours. Lectures, laboratory work, and field trips. Summer course, based at Skidaway Institute of Oceanography, Savannah.

Prerequisite: GLY 403 and 405 or their equivalents.

Paleoecologic significance of present-day marine organisms and their potential preservation as fossils. Factors controlling the facies distribution of benthic organisms, their substrate relationships and associated physical and biogenic sedimentary structures, and their disposition after death.

460. Solid Earth Geophysics. 5 hours.

Prerequisite: GLY 323, 332, and PCS 128-128L. The student will use the principles of geophysics in evaluating the dynamics and bulk properties of the earth. Topics will include earthquake seismology, geodesy, geomagnetism, the thermal history of the earth, earth resistivity methods, the composition and state of the earth's interior, and the new Global Tectonics hypothesis.

462. Exploration Geophysics. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 323 and 332 and PCS 128-128L.

Geophysical techniques used to determine the presence and extent of deposits of minerals and the subsurface structure of a selected locality from field measurements.

463. Photogeology. 4 hours. Two lectures and two lab periods.

Prerequisite: GLY 323, 332; GGY 420-420L; recommended: GLY 405.

Advanced principles of photogeology. Geologic interpretations and measurements from aerial photography. An introduction to geologic interpretation of color photography and spacecraft imagery of planetary surfaces.

464. Paleomagnetism. 5 hours. Four lectures and one laboratory period.

Prerequisite: PCS 128-128L, GLY 321, 323, and 332.

Application of the principles of rock magnetism and paleomagnetism as a geologic tool. Topics include: magnetic minerals, magnetization of rocks, the geomagnetic field, magnetic reversals, data analysis, polar wandering, and mass extinctions. Application of rock magnetism to a specific laboratory problem.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

500. Geology for Teachers. 5 hours. Lecture and demonstration.

Prerequisite: 20 hours physical and/or biological sciences, at least 5 of which must be chemistry. Not open to Geology majors.

Cultural and practical aspects of Earth study. Identification of common rocks and minerals. Geologic principles and processes; outline of Earth's history.

520. (LAR) Environmental Geology. 5 hours. Four lectures and one lab period plus field trips.

Not open to Geology majors.

Discussion of geologic materials and processes with an emphasis on environmental interpretation for planning, land use, and con-

struction practices. Role of water, geologic hazards, and geotechnical inputs to environmental-impact assessment. Site evaluation, sequential land use, mined-land reclamation, and waste management.

GERMANIC AND SLAVIC LANGUAGES

A student continuing a language taken in high school will be placed in the appropriate course on the basis of scores on the College Entrance Examination Board Scholastic Achievement Tests and other pertinent information.

No student may receive credit for any course which is a prerequisite to a course for which he has already received college credit. Exception may be made only by the head of the department.

Majors in German or Germanic and Slavic Languages must satisfy the relevant Bachelor of Arts Degree requirements of the Franklin College of Arts and Sciences as defined in this Bulletin.

Opportunity for study at the University of Erlangen/Nürnberg in Germany is offered under the University System of Georgia Studies Abroad Program every summer. GER 410, 420 or equivalents, and one other course are usually offered.

German (GER)

Any course numbered below 200 is considered elementary and will not count toward the minimum of 20 hours required to major in language. GER 103 and higher numbered courses are conducted largely in German.

101, 102. Elementary German. 5 hours each. Fundamentals of grammar, pronunciation, conversation, composition, reading, and translation. Additional language laboratory work required.

103. Intermediate German. 5 hours. Prerequisite: GER 102 or two entrance units in German.

Grammar, reading and translation of intermediate texts, composition, and conversation. Additional language laboratory work required.

104. Intermediate German. 5 hours. Prerequisite: GER 103. Readings in modern German prose, composition and conversation. Additional language laboratory work available.

114H. Intermediate German (Honors). 5 hours. Not open to students with credit for GER 104.

A substitute for GER 103 and 104.

Grammatical construction will be discussed and reviewed. There will be intense classroom practice of conversational German, and the student will also be required to do extensive reading and translating of current German literature.

145. German Diction. 1 hour. Two class hours per week.

Prerequisite: Permission of department.

A study of German pronunciation, with special emphasis on the fundamentals of German phonetics and sound production as applied to reading and singing. Open to voice majors and others interested.

201. Introduction to German Literature I. 5 hours.

Prerequisite: GER 104 or equivalent. May be taken before or after GER 202.

A study of the main literary movements and representative works before 1900 in the original language.

202. Introduction to German Literature II. 5 hours.

Prerequisite: GER 104 or equivalent. May be taken before or after GER 201.

A study of the main literary movements and representative works of the 20th Century in the original language.

206. Business German. 5 hours.

Prerequisite: GER 104.

Introduces business students to the German language through an approach that emphasizes conversational skills and business terms. It attempts to acquaint students with the environment of Germany as it relates to business.

210. Conversation and Composition. 5 hours.

Prerequisite: GER 104 or equivalent.

A course offering three recitation periods and two double periods for oral practice per week.

310. Literature and German Culture. 5 hours.

Prerequisite: GER 104 or permission of department.

The interrelationship between literature and culture in 19th and 20th-Century Germany. The course will consider the role of literature as a primary influence in the significant philosophical, political, and sociological trends of the time.

350. Techniques of Translation. 5 hours.

Review of grammar, idioms, and vocabulary; practice in translating moderately difficult technical and non-technical German texts into correct English.

360H. Early Heroic Literature (Honors). 5 hours.

The oldest northern European medieval literary movements studied as historical remnants from the Age of Migrations to the Viking Period, with influences from mythology and folklore.

399. Independent Study. 1-5 hours.

Prerequisite: GER 104.

Affords the advanced student opportunity to conduct independent study and research under the direction of individual staff members.

410. Advanced Composition and Conversation. 5 hours.

Prerequisite: GER 210 or equivalent.

Advanced oral-aural language study including phonetics and linguistics, combined with advanced grammar and stylistics.

420. German Culture. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.

German cultural history from Luther to the present.

425. Survey of German Literature. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.

German literature from the Old High German Period to the present. Texts from the older period will be read in New High German translation.

430. German Drama I. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.

Reading and interpretation of texts in their historical and literary-historical context.

431. German Drama II. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.

Interpretation of dramas representative of the significant literary movements from Naturalism until today.

432. The Age of Goethe (Sturm and Drang to Schiller's Death). 5 hours.

Prerequisite: GER 201 or 202 or equivalent.

The Sturm and Drang group, including Goethe and his role in it; Schiller's work; other contemporaries, including Hölderlin and ending with Schiller's death in 1805.

433. Age of Goethe (1805-1832). 5 hours.

Prerequisite: GER 201 or 202 or equivalent.

The older Goethe, from Schiller's death in 1805 to 1832. Emphasis on Goethe's mature works, *Wahlverwandschaften*, *Westöstlicher Divan*, and *Wilhelm Meisters Wanderjahre*.

434. Goethe's Faust I and II. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.

Reading and interpretation.

435. German Novelle of the 19th and 20th Centuries. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.

The development of the genre, reading and interpretation of representative texts.

436. German Romanticism. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.

German Romanticism from 1790 to 1825. The study of this movement in regard to its literary, historical and cultural context.

437. Modern German Literature. 5 hours.

Prerequisite: GER 201 or 202 or equivalent.

Reading and interpretation of representative samples of 20th-Century literature.

438. (LIN) Contrastive Grammar: German/English. 5 hours.

Prerequisite: Two years of college German or permission of department.

Prepares future teachers of German to isolate and identify pedagogically important structural similarities and differences.

439. The German Lyric. 5 hours.

Prerequisite: GER 201 and 202 or permission of department.

A study of German lyrics and ballads from the time of the Minnesingers to the present.

441. German Prose. 5 hours.

Prerequisite: GER 201 and 202 or permission of department.

Reading and interpretation of selected important novels and *novelle*.

446. (LIN) Linguistic Structure of German. 5 hours.

Prerequisite: Two years of college German or permission of department.

Emphasis on phonetics, phonology and intonation, with introduction to the overall structure of German.

448. German Realism and Naturalism. 5 hours.

Prerequisite: GER 201 or 202.

Study and analysis of the representative prose works of the major realists and naturalists of the nineteenth century with emphasis on Hebbel, Keller, Storm, Meyer, Fontane, and Hauptmann. A term paper will be required. The course is taught in German.

452P. (HIS) A Review of German History Since the Reformation. 5 hours.

Prerequisite: 20 hours of German above 104 or permission of department.

An interpretative survey of German history since the Reformation. The impact of political

developments and cultural trends will be stressed. The German language will be used in lectures and seminar sessions.

460. (LIN) History of the German Language. 5 hours.

Study of the origins of modern standard German from the Indo-European parent language through proto-Germanic, Old and Middle High German, and the early modern period.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Netherlandic (NET)

399. Independent Study in Netherlandic. 1-5 hours; maximum 15 hours.

Prerequisite: Permission of department.

This course affords the advanced student opportunity to conduct independent study and research under the direction of individual staff members.

Russian (RUS)

101, 102. Elementary Russian. 5 hours each. Grammar and composition, conversation, reading and dictation.

103. Intermediate Russian. 5 hours.

Prerequisite: RUS 102.

Intermediate, grammar, reading, conversation, dictation, and composition.

104. Russian Grammar, Composition, and Conversation. 5 hours.

Prerequisite: RUS 103.

Advanced grammar, reading, oral and written composition, conversation, dictation.

310. Russian Composition and Conversation. 5 hours.

Prerequisite: RUS 104 or equivalent.

The course is designed to promote the student's ability to express himself/herself accurately in speaking and in writing Russian and to develop his/her ability to understand native Russian speech. The course is conducted in Russian.

320. Russian Culture. 5 hours.

Prerequisite: RUS 310 or equivalent.

A survey of Russian culture from the begin-

ning to the present. The course will assist students in attaining a higher degree of proficiency in all language skills, especially in the area of vocabulary building. This course is to be conducted exclusively in Russian.

350. Techniques of Translation. 5 hours.

Prerequisite: Permission of department.

Review of grammar, idioms, and vocabulary; practice in translating moderately difficult technical and non-technical Russian texts into correct English.

399. Independent Study in Russian. 1-5 hours.

This course affords the advanced student opportunity to conduct independent study and research under the direction of individual faculty members.

400. Business Russian. 5 hours.

Prerequisite: RUS 101 and 102.

Introduction to the nomenclature and protocol of East-West trade relations. Acquisition of Russian business terminology.

401. Introduction to 19th-Century Russian Literature. 5 hours.

Prerequisite: RUS 310 or equivalent.

A study of representative works in the original language. The course is conducted in Russian.

402. Introduction to 20th-Century Russian Literature. 5 hours.

Prerequisite: RUS 310 or equivalent.

A study of representative works in the original language. The course is conducted in Russian.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Russian Translation (RUT)

405. 19th-Century Russian Prose in English Translation. 5 hours.

This course will cover various topics in Russian literature. The class will be conducted in English, and all readings will be done in translation.

406. 20th-Century Russian Prose in English Translation. 5 hours.

Reading and discussion, in an historical context, of works by A. Bely, A. Solzhenitsyn, B. Pasternak, V. Nabokov, M. Bulgakov, Ye. Zamyatin, and Yu. Olesha.

Scandinavian (SCA)

401. Danish, Norwegian and Swedish Translation. 5 hours.

Prerequisite: At least 3 terms of another foreign language or by permission of department.

This course will teach a reading knowledge of the three mutually intelligible dialects of mainland Scandinavia, usually referred to as Danish, Norwegian and Swedish. Their common grammatical structures and basic vocabulary will be taught, the numerous parallels to English drawn, and their minor orthographic, grammatical, and vocabulary differences explored.

Swedish (SWE)

399. Independent Study in Swedish. 1-5 hours; maximum 15 hours.

Prerequisite: SWE 350 or equivalent.

This course affords the advanced student opportunity to conduct independent study and research under the direction of individual staff members.

HISTORY (HIS)

The major in history includes 40 quarter hours of history beyond the history core curriculum requirement. Any one of the surveys of United States history (HIS 251, 252, 253H, or 254H) may be counted toward the major, but all remaining major courses must be taken at the advanced level (i.e., courses numbered 300 or 400). The major must include at least one advanced course in any *three* of the following areas: Asia, Africa, Western Europe, Eastern Europe, Latin America, and the United States. In addition, it must include HIS 495T or any other designated topical course. During the senior year the sequence HIS 497S, 498S, 499S must be completed. Upon approval of the advisor and endorsement of the Coordinator of Instruction, two advanced courses in a related discipline may be counted toward the major. Honors history majors may substitute HIS 496H, 497H, or 498H in lieu of the special-topics requirement, and they may substitute HIS 499H for HIS 499S when deemed suitable by the advisor and endorsed by the Coordinator of Instruction. A minimum of 30 quarter hours of the major must be earned in residence at The University of Georgia.

111. History of Western Civilization to 1500. 5 hours.

Development of the institutions of the Western world from earliest times to 1500.

112. History of Western Civilization Since 1500. 5 hours.

Development of the institutions of the Western world from 1500 to the present. Credit for both HIS 112 and 121 or 122 will not be allowed.

121. Early Modern Western Civilization. 5 hours.

A cultural survey of Western civilization from the Renaissance to the end of the Napoleonic Era, emphasizing ideas of the period.

122. Modern Western Civilization. 5 hours.

A cultural survey of Western civilization from the Congress of Vienna to the present, emphasizing ideas of the period.

215H. History of Western Civilization to 1500 (Honors). 5 hours.

Not open to students with credit for HIS 111. Development of the institutions of the Western world from earliest times to 1500. Taught in seminar fashion, with extensive outside readings in both the principal secondary and primary sources.

216H. History of Western Civilization 1500 — 1815 (Honors). 5 hours.

Not open to students with credit for HIS 112 or 121.

Development of the institutions of the Western world from 1500 to 1815. Taught in seminar fashion, with extensive outside readings in both the principal secondary and primary sources.

217H. History of Western Civilization Since 1815 (Honors). 5 hours.

Not open to students with credit for HIS 112 or 122.

Development of the institutions of the Western world since 1815. Taught in seminar fashion, with extensive outside readings in both the principal secondary and primary sources.

251. American History to 1865. 5 hours.

Development of the American nation from the Age of Discovery to 1865. Also see pages on Examinations on the Constitutions in the Academic Program section.

252. American History Since 1865. 5 hours.

Development of the American nation from 1865 to the present. Also see pages on Examinations on the Constitutions in the Academic Program section.

253H. History of the U.S., 1500-1865 (Honors). 5 hours.

Not open to students with credit for HIS 251. Development of the American nation from

the Age of Discovery to 1865. More attention will be given to cultural history and to themes which are usually treated briefly in traditional courses. Also see pages on Examinations on the Constitutions in the Academic Program section.

254H. History of the U.S., 1865-Present (Honors). 5 hours.

Not open to students with credit for HIS 252. Development of the American nation from 1865 to the present. More attention will be given to cultural history and to themes which are usually treated briefly in traditional courses. Also see pages on Examinations on the Constitutions in the Academic Program section.

300M. Junior Seminar in History: Methods, Theories of History, and Historiography. 5 hours.

Prerequisite: HIS 111, 112, 251 or 252 or permission of department.

A seminar for history students on the methods of historical research and writing as well as a brief study of philosophy of history and historiography.

303S. American Maritime History. 5 hours.

A survey of life and activities on the coast and waterways of the United States and of the actions of waterborne Americans throughout the world's oceans. The strongest focus is upon the maritime experience of the Southeastern United States.

310H. Junior Honors Seminar: Theories and Interpretations of History. 5 hours.

Not open to students with credit for HIS 300M.

Designed to acquaint the student with history as a discipline. Deals with methods of historical research and writing, provides an introduction to the philosophy of history, to historiography and to the various schools of thought in history.

311E. Colonial and Revolutionary America. 5 hours.

Exploration and settlement of the English colonies in North America; development of colonial life through blending of European backgrounds and American environment.

311H. America and the World, I (Honors). 5 hours.

An Honors undergraduate seminar. An introduction to the principles of geopolitics, emphasizing their effects on the development of the U.S. during the formative, colonial and national periods. Topics such as national interest and security, manifest destiny, balance

of power and concepts of power politics will be treated.

312H. America and the World, II (Honors). 5 hours.

An Honors undergraduate seminar. The U.S. as a 20th-Century world power: a study of contemporary American foreign policy problems in the light of the principles of geopolitics. Topics such as the transition period in foreign affairs, 1898-1941. The post World War II period and principles and practices in contemporary foreign affairs will be treated.

312E. From Jefferson to the Civil War. 5 hours.

Covers the period in American history from the election of Jefferson in 1800 to the election of Lincoln in 1860. Development of political, social, and economic factors.

315C. (REL) Religion in the United States. 5 hours.

A survey of the most significant developments in American religious history and thought from Puritanism to the present. Particular attention will be given to the social and cultural contexts in which various religious movements arose.

316M. A Survey of American Diplomacy to 1914. 5 hours.

A survey of the origins of American diplomacy and the development of American foreign relations to 1914.

316P. Survey of American Diplomacy Since 1914. 5 hours.

A survey of American foreign relations from 1914 to the present.

325. Ancient History. 5 hours.

A survey of the political and economic world from the Stone Age to the end of the Western Roman Empire in 476 A.D.

330F. History of European Women. 5 hours.

A survey of the role of women in European history from ancient to modern times with major emphasis on cultural, social and political developments.

331F, 331P. Latin American Civilization. 10 hours (5 hours each of two quarters; either course may be taken for final credit).

A survey of Latin American history and culture from pre-conquest period to 1800, and since 1800.

332H. Comparative History of the Americas, 1808 to the Present (Honors). 5 hours.

A comparative survey of selected topics in the development of nation states in the Western Hemisphere since 1808. Topics will include, among others: Independence; Imperialism;

Race Relations; Reform and Reaction in the Americas; and Nationalism. An attempt will be made to examine as many national models as possible from English, Spanish, Portuguese and French-derived societies.

344M. Medieval Civilization. 5 hours.

Europe from the fall of Rome to the Renaissance: the barbarian invasions, growth of power of the Church, struggle with temporal rulers, feudalism, the Crusades, social and literary development.

350F. Renaissance and Reformation. 5 hours.

A study of the transition from medieval conditions with emphasis on religious upheaval of the 16th Century.

363F. English History to 1660. 5 hours.

A survey of English history from earliest times to 1660.

363P. English History since 1660. 5 hours.

A survey of English history from 1660 to the present.

370F. Russian History to 1856. 5 hours.

A survey of Russian history from early beginnings to 1856.

370P. Russian History Since 1856. 5 hours.

A survey of Russian history from 1856 to the present day.

380H. Introduction to Asian Civilizations (Honors). 5 hours.

Introduction to the sources of Indian, Chinese, and Japanese tradition; provides a broad survey of the major historical developments of these nations.

381F, 381P. African Civilization. 10 hours (5 hours in each of two quarters; either course may be taken for final credit).

A survey of African civilization from earliest times to the present. 381F deals with North Africa, while 381P studies Africa south of the Sahara.

385H. Communist China (Honors). 5 hours.

Rise of Communism in Contemporary China; specific topics will include, among others; Marxism and Maoism, the Chinese Civil War, the Great Leap Forward, the Great Proletarian Cultural Revolution, and China after Mao.

400P. The American People and the Conditions of Freedom Since 1865. 5 hours.

Prerequisite: HIS 251 or 252.

The relationship between the American people and their social, political, and economic institutions constitutes the central focus. The structure of authority, the problems of the market, class, modernization, and hegemony are analyzed in the context of pressure to

subordinate the individual and community to the demands of the state and economy.

401C. History of Criminal Justice. 5 hours.

This course will trace the historical development of Western criminal justice mechanisms from the Mosaic code to the 20th Century. It offers a critical analysis of criminal law, legal procedures, and court systems as products of historical forces, including the role of shared beliefs, traditions and distributions of power in particular cultures.

410W. The Study of Local History. 5 hours.

Prerequisite: 20 hours of U.S. history, including two upper division courses, one of which is to be an advanced course in the history of Georgia; or permission of department.

The concentration will be upon three local developments: establishment and evolution of American society in the Southeast; the recreation of this history through various scholarly measures; and techniques for teaching local history. The course will consist of a combination of fieldwork, lectures, written and/or oral history projects, and independent reading.

411M. American Colonies, 1606-1763. 5 hours.

Early settlements in North America by the English, French, Spanish, and Dutch; shaping of American society by adaption of old world forces to new world environment.

411N. Everyday Life and Customs in Colonial America. 5 hours.

The Atlantic frontier, the development of colonial life, and the emergence of colonial arts and customs will be emphasized. The class structure of the colonies will be analyzed. Of prime concern will be the growth of American self-awareness as mirrored in colonial history and literature.

411T. Revolution and Rise of the American Nation. 5 hours.

American history from 1763 to 1800: the Revolution; the Articles of Confederation; writing and adoption of the Federal Constitution; the administration of George Washington and John Adams.

412P. The Trans-Mississippi West. 5 hours.

American political, social, and economic institutions as they developed in the region west of the Mississippi River. The impact of the frontier upon the American people.

412T. The Antebellum South. 5 hours.

Begins with the late colonial period, when settlers were pushing across the southern Appalachians, and continues to the secession of the

South. Southern life and civilization will be studied.

413F. The Civil War Period of American History. 5 hours.

Civilian activities of the people; problems of the Northern and Southern governments. Emphasis on the Confederacy. Only major military campaigns will be considered.

413P. The Era of Reconstruction, 1865-1877. 5 hours.

The reconstruction of the South along all lines, as well as the remaking of the North. Beginnings will be found during the Civil War; the process will be continued to 1877.

414C. The South Since Reconstruction. 5 hours.

The South since the Reconstruction period with emphasis upon social, economic, and political developments of the region.

414F. The Origins of Modern America, 1877-1917. 5 hours.

An examination of the expansion, industrialization, and urbanization of the United States, of the emerging political, economic and social problems, and of the political responses to the development of the era.

414P. Recent America, 1917-1945. 5 hours.

The history of political, economic, social and cultural development during the present century.

414T. Modern America, 1945-Present. 5 hours.

An examination of social, economic, diplomatic, and political trends in the United States during the post-World War II era.

415E. Constitutional History of the United States. 5 hours.

A study of how actual political and social conditions in American history have produced fundamental constitutional principles and practices. Also see pages on Examinations on the Constitutions in the Academic Program section.

415F. American Legal History. 5 hours.

A survey of American legal history from the Revolutionary era to the present which emphasizes the evolution of legal thought and institutions, changes in the nature of the legal profession and legal education, and the role of law and the courts in American political, economic, and social development.

415P. American Political Trials. 5 hours.

Prerequisite: One course each in history of U.S. to 1865 and since 1865; an undergraduate major in history, legal studies, or a social science, or permission of department.

Historical analysis of the exploitation of law and the judicial process for political purposes by American governments and their opponents from colonial times to the Vietnam era, with emphasis on the causes of political justice and its impact on civil liberties, especially freedom of expression.

415T. American Cultural History Since the Mid-19th Century. 5 hours.

A study of the principal developments in American philosophy, science, literature and art.

415W. Women in American History and Culture. 5 hours.

An introduction to the social science background of the American feminist movement. Emphasis will be placed on women in the 19th Century social movements, in the drive for suffrage and liberation and in contemporary feminism.

416E. American Ideals in Foreign Policy. 5 hours.

An analysis of the aims, ideals, and methods that have determined American foreign policy from 1776 to the present.

416M. Problems in American Foreign Policy, 1776-Present. 5 hours.

A study of selected problems with emphasis on readings.

417M. History of Georgia. 5 hours.

Not open to students with credit for HIS 417N and 417P.

Georgia from its first occupation by the Spaniards to the present. A comprehensive discussion of all aspects of Georgia's development. Also see pages on Examinations on the Constitutions in the Academic Program section.

417N. Early and Antebellum Georgia. 5 hours.

Not open to students with credit for HIS 417M.

Prerequisite: 10 hours of U.S. history.

An examination of social, economic, and political developments in Georgia from the Spanish period through the Civil War. Also see pages on Examinations on the Constitutions in the Academic Program section.

417P. Modern Georgia. 5 hours.

Not open to students with credit for HIS 417M.

An examination of social, political and economic developments in Georgia from the Reconstruction period to the present. Also see pages on Examinations on the Constitutions in the Academic Program section.

418P. Modern Black America. 5 hours.

The 20th-Century struggle for civil rights, black identity and self-determination. The response to industrialism and urbanization. The role of black institutions and political organizations. The philosophy and tactics of accommodation, integration, and separatism.

431F. The Caribbean Area. 5 hours.

Conquest and settlement of the islands and Caribbean periphery by the Spanish, the intrusions by the French, Dutch, and English, and the more recent developments of the 19th and 20th Centuries.

433F. Inter-American Problems. 5 hours.

Economic, social and political problems of Latin America since independence; cooperative efforts of the United States in seeking solutions within the framework of the Pan-American movement and the Organization of American States.

433P. Latin America in the 20th Century. 5 hours.

20th-century influences that are producing socioeconomic unrest in much of Latin America; efforts of the United States and private organizations to combat the spread of these conditions.

437M. Ancient Near East. 5 hours.

A survey of the ancient peoples and cultures of the Near East from earliest historical times through the Persian empire.

438M. Greek History. 5 hours.

A study of Greek history through the time of Alexander the Great.

438P. Hellenistic History. 5 hours.

Problems in Hellenistic History from 330 B.C. to the Roman conquest with emphasis on the Antigonid, Seleucid, or Ptolemaic dynasty.

439F. Roman Republic. 5 hours.

A study of Roman history to the end of the republic.

439P. Roman Empire. 5 hours.

History of the Roman Empire from 27 B.C. to A.D. 337 with special emphasis on the government of Augustus, reasons for its decline, and the final attempt at unification of the empire under Constantine.

445F. Medieval England, 1066-1485. 5 hours.

A detailed study of English political, constitutional, legal, and feudal history from the Norman conquest to the death of Edward I.

445G. England in the Age of Chaucer, 1307-1485. 5 hours.

An investigation of political, social, and intellectual developments from the beginning of

the reign of Edward II through that of Richard III, the epoch of Shakespeare's great historical dramas and of Chaucer.

445M. Medieval Intellectual Survey. 5 hours.

Survey of medieval intellectual history. An examination of European intellectual development from Constantine to Dante.

445P. Medieval France, 987-1498. 5 hours.

An intensive study of France under the Capetian and early Valois kings. Emphasis will be placed upon political, feudal, and social history, unified by the story of the growth of the national state focused upon the king.

450M. Intellectual History of the Renaissance. 5 hours.

Survey of Renaissance intellectual history. An examination of European intellectual history from Dante to Erasmus.

450P. Intellectual History of Early Modern Europe. 5 hours.

Intellectual history of early modern Europe. An examination of intellectual developments in 16th and 17th-Century Europe.

450S. Intellectual History of Modern Europe, 1700-1815. 5 hours.

An historical study of European thought from 1700 to 1815, with emphasis on the interrelationship between political development and dominant ideas and beliefs.

450W. Intellectual History of Modern Europe, 1815-Present. 5 hours.

An historical study of European thought from 1815 to 1950, with emphasis upon the interrelationship between political development and dominant ideas and beliefs.

451E. History of the Reformation. 5 hours.

Intensive study of selected aspects of the Reformation with emphasis on the late medieval background, the theology of the major reformers, the establishment of the major denominations, the Council of Trent and modern historiography of the Reformation.

451M. The Age of Absolutism. 5 hours.

Europe from 1648 to 1789, with particular emphasis upon France. The political history of the age will be supplemented by examination of economic and social institutions and the Enlightenment.

452F. The French Revolution and Napoleon. 5 hours.

Europe from 1789 to 1815, centering upon events in France. Stress is placed upon the political, diplomatic and military history of the era.

452P. (GER) A Review of German History Since the Reformation. 5 hours.

See GER 452P.

453E. 19th-Century Europe. 5 hours.

A history of Europe from 1814 to 1914. The main political, international, social, economic, cultural, and intellectual movements will be stressed.

453F. 20th-Century Europe. 5 hours.

The history of Europe from 1914 to the present. The main political, social, economic, cultural, and intellectual movements will be stressed.

453M. France in the 19th and 20th Centuries. 5 hours.

A survey of political, social, cultural, and economic developments in France since the fall of Napoleon I.

453P. The Emergence of Modern Germany, 1800-1914. 5 hours.

A survey of political, social, and cultural developments in 19th-Century Germany (1800-1914). Domestic events will be stressed.

457A. Military History to 1815. 5 hours.

A history of warfare in ancient, medieval and early modern times. Its techniques, theory and role in the evolution of western society.

457B. Recent Military History. 5 hours.

The history of warfare and the development of weapons, techniques, and military thought in the 19th and 20th Centuries.

457E. The Age of World War I. 5 hours.

The origins of modern world politics, culminating in World War I and the peace settlement of 1918-24. The interaction between world politics and the 20th-Century ideologies — welfare-state, democracy, fascism, and communism — and the intellectual and technological roots of these ideologies.

457F. The Age of World War II. 5 hours.

A continuation of HIS 457E. The interwar period, the war, and its consequences with emphasis on Europe.

457M. Germany Under the Weimar Republic to the Present. 5 hours.

A survey of political and social developments since 1918. Emphasis will be given to the breakdown of the Weimar Republic and the rise and structure of Naziism.

457T. The Age of the Cold War. 5 hours.

A continuation of HIS 457F. The political, ideological, and military conflicts and the search for a new world order in the aftermath of World War II.

464E. The Tudor Period of English History, 1485-1603. 5 hours.

England's emergence as a modern state. Her political, religious, economic, social, and intellectual development during the Renaissance and Reformation.

464M. The Stuart Period of English History, 1603-1714. 5 hours.

England during the evolution of parliamentary supremacy: problems leading to the Civil War, interregnum, restoration, and revolution settlement.

464T. Constitutional History of England. 5 hours.

Development of constitutional and legal institutions of England from Saxon times to the present.

465F. Britain in the Age of Revolution 1714-1868. 5 hours.

This course will discuss British foreign and domestic policies under the stresses of the American War of Independence, the French Revolution, and the Industrial Revolution. Special attention will be given to the establishment of political stability and the growth of industrial society.

465G. Modern British History, 1868-Present. 5 hours.

A survey of the political, economic, social and diplomatic developments in Great Britain during the period 1868-present.

465M. British Empire and Commonwealth. 5 hours.

A survey of the British Empire from the 15th Century to 1922.

470P. Imperial Russia, 1725-1881. 5 hours.

The St. Petersburg period of Russian history to the assassination of Alexander II, and the rise of the generation which created Soviet Russia. Russian influence in world affairs will be interpreted in the light of basic changes in domestic policy after the French Revolution.

471F. The Russian Revolution and the Rise of Stalin, 1881-1927. 5 hours.

The final phase of the Russian revolutionary movement and the collapse of the empire under the impact of the wars of 1904-05 and 1914-17. The 1917 Revolutions, Bolshevik victory, and the period of the New Economic Policy.

471P. Soviet Union Since 1927. 5 hours.

Soviet Union from Stalin Revolution to present. Stresses domestic developments and rise of USSR to world power. Post-Stalin internal changes and polycentrism in Communist world.

472E. Eastern Europe Under Nationalism and Communism 19th and 20th Centuries. 5 hours.

A survey of Eastern Europe in the age of nationalism and Communism during the 19th and 20th Centuries. Covers major political, economic, and social developments plus importance of the area in international relations.

478A. History of China I: The Traditional Order from Prehistory to the Sung Dynasty. 5 hours.

An examination of the political, economic, social and cultural life of ancient China from its earliest beginnings to the Sung dynasty. Emphasis is on traditional Confucianism, Taoism, and Buddhism, the primary molders of Chinese culture.

478B. History of China II: The Transitional State from the Sung Dynasty to the 1911 Revolution. 5 hours.

An examination of significant changes in Chinese culture, as well as an analysis of those forces within and without China that contributed to or inhibited modernization.

478C. History of China III: The Modern Transformation from the 1911 Revolution to the Present. 5 hours.

A study of China in the 20th Century with the focus on the Republic of China, its disintegration, the rise of Communism, and the changes in the nature of the People's Republic of China.

480P. Nationalism in North Africa and the Problems of New Power. 5 hours.

Origins of nationalism in Morocco, Algeria, Tunisia and Libya; problems involved in gaining independence, of setting up new governments, and of independently meeting difficulties that were earlier dealt with by the colonial powers.

482P. Imperialism in Africa, 1860-1919. 5 hours.

A study of the European penetration of Africa, the diplomacy of partition, and the African response.

488M. The Middle East in Modern Times. 5 hours.

Political, economic and social developments from 1800 to the present: collapse of the Ottoman empire and old Persia, nationalism and the anti-colonialist revolt, the emergence of Israel, U.S. interests and the growing Soviet presence in the area.

493M. Philosophy of History. 5 hours.

An introduction to both classical and modern views on the nature of history. Consideration will also be given to the analysis of the conceptual foundations of historical methods,

theories or explanation, the problem of historical objectivity, and the purpose of history and its relation to other disciplines.

495T. Topics in History. 5 hours.

Prerequisite: Junior or senior standing.

A study of a special subject not otherwise offered in the history curriculum. Topics, methodology, and instructors vary from quarter to quarter. Normally, only one such course may be counted toward the major or minor in history, exceptions being made only by the Coordinator of Instruction.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

497S. Pro-Seminar in Methodology. 1 hour.

Prerequisite: Completion of all lower-division history requirements plus at least three advanced history courses.

A study of methods of historical research, the use of primary sources, guides to historical literature, effective writing style, historiography, and bibliographic form. Includes some theoretical and philosophical considerations but focuses primarily upon the practical aspects of historical research and writing. Required of all history majors.

498S. Pro-Seminar in Master Works. 2 hours.

Prerequisite: Completion of all lower-division history courses and at least three advanced history courses.

Corequisite: HIS 497S.

A survey of selected master works of history and an examination of the life and thought of the authors. Stresses an analysis of the nature of the great writers' subject matter, style and structure, presumptions and predilections, and mode of explanation. Readings vary according to instructor. Required of all history majors.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

499S. Senior Seminar. 2 hours.

Prerequisite: HIS 497S and 498S.

A continuation of HIS 497S and 498S, this seminar is designed to provide instruction on procedures for selecting, researching, and preparing a formal paper on a valid historical topic. In addition to seminar preparations and discussions, the student must assume responsibility for considerable independent work,

producing a satisfactory formal paper. Required of all history majors.

HONORS PROGRAM

(Special Problems Seminars)

Arts and Literature (ARL)

411H, 412H, 413H. Special Problems Seminar in Arts and Literature (Honors). 1-5 hours each. See description under ARTS AND LITERATURE section.

Science (SCI)

421H, 422H, 423H. Special Problems Seminar in Science (Honors). 1-5 hours each. See description under SCIENCE section.

Social Science (SOS)

401H, 402H, 403H. Special Problems Seminar in Social Science (Honors). 1-5 hours each. See description under SOCIAL SCIENCE section.

INTERDISCIPLINARY STUDIES (IDS)

307. (ANT/ZOO) Environment and Man. 5 hours. See ZOO 307.

499. Senior Thesis. 1-5 hours.

Prerequisite: Senior standing in the Interdisciplinary Studies Program. Individual research or project in the major area. Required of all IDS majors.

LINGUISTICS (LIN)

An undergraduate major in Linguistics is available through the Interdisciplinary Studies Program. All prospective majors must take either LIN 210 or LIN 320H followed by 40 hours of courses and IDS 499. Specific information on area requirements within the LIN major is available from The Director, Room 226, Park Hall.

210. The Study of Language. 5 hours.

An introduction to the scientific study of language, emphasizing such topics as the organization of grammar, language in space and time, and the relationship between the study of language and other disciplines.

320H. Introduction to Linguistics (Honors). 5 hours.

Not open to students with credit for LIN 210. A survey of the field of linguistics and of linguistic theory. Students will be encouraged to conduct individual explorations into the

relationship between linguistics and their major fields of interest.

383. (ANT) Languages of the World. 5 hours. See ANT 383.

400T. (ENG) History of the English Language. 5 hours. See ENG 400T.

402T. (ENG) Dialectology. 5 hours.

The phenomena of regional and social linguistic variation among speakers of the same language are investigated, with reference to dialect studies of various aspects of several different languages.

404T. (ENG) The Structure of Black English. 5 hours.

History and structure of black English; theories of its origins; comparison with other dialects of American English; identity of its speakers.

406T. (ENG) Old English. 5 hours. See ENG 406T.

411T. (ENG) English Grammar. 5 hours. See ENG 411T.

413T. (ENG) English Grammar: Phonology and Morphology. 5 hours. See ENG 413T.

414S. (SPA) Speech and Hearing Science. 5 hours. See SPA 414S.

415T. (ENG) Transformational Syntax. 5 hours. Study of techniques and formalisms for analyzing syntactic phenomena of human languages within the framework of transformational grammar. Examples will be drawn primarily from English.

419. History of Linguistics. 5 hours.

The development of linguistic thought from the Hellenic period to the 20th Century.

421. Introduction to Indo-European Studies. 5 hours.

The history and development of the Indo-European language family: the various early Indo-European dialects, their grammatical structures, and the evolution of those structures from the proto-language.

430. Generative Phonology. 5 hours. Prerequisite: ANT (LIN) 481.

Study of techniques and formalisms for analyzing sound systems of languages by means of distinctive features.

438. (GER) Contrastive Grammar: German/English. 5 hours. See GER 438.

442. (PHY) Set Theory and Logic. 5 hours. See PHY 442.

443. (PHY) Symbolic Logic I. 5 hours.

See PHY 443.

446. (GER) Linguistic Structure of German. 5 hours.

See GER 446.

449. Psychology of Language. 5 hours.

Prerequisite: Permission of department.

Theories and relevant data are studied from the perspective of language as a communicative device.

450. (PSY/SPA) Language Development. 5 hours.

See SPA 450.

460. (GER) History of the German Language. 5 hours.

See GER 460.

461. (SKT) Structure of Sanskrit I. 5 hours.

An introduction to the phonology, morphology, and syntax of the classical Sanskrit language, emphasizing the position of Sanskrit within the Indo-European language family and its importance for Indo-European linguistics.

462. (SKT) Structure of Sanskrit II. 5 hours.

Prerequisite: LIN 461.

Continued studies in both the synchronic and diachronic grammar of classical Sanskrit.

469. (ANT) Historical Linguistics. 5 hours.

Traditional methods of historical linguistics are reviewed, with examples from several different language families. Various kinds of possible phonological and syntactic change are investigated in relation to modern linguistic theory.

471. Languages in Contact. 5 hours.

Prerequisite: ANT(LIN) 480 or LIN 210 or 320H or permission of department.

The study of the influence of languages on other languages spoken in the same or neighboring areas, with consideration of interference in phonology, morphology, syntax, semantics, and vocabulary.

480. (ANT) Introduction to Linguistics. 5 hours.

See ANT 480.

481. (ANT) Phonetics and Phonology. 5 hours.

See ANT 481.

482. (ANT) Linguistics: Morphology. 5 hours.

See ANT 482.

485. (ANT) American Indian Languages. 5 hours.

See ANT 485.

486. (ANT) Language in Culture and Society. 5 hours.

See ANT 486.

490. Topics in Indo-European Linguistics. 5 hours.

Prerequisite: Permission of department.

A study of the synchronic and diachronic grammar of an older Indo-European language not otherwise taught at the University. Possible offerings include Avestan, Hittite, Lithuanian, Old Church Slavic, and Old Irish. Occasionally other languages or topics, such as Indo-European phonology, morphology, or syntax may be covered.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

500. (EEN) Language Acquisition and Development. 5 hours.

See EEN 500.

507. (EEN) English Language Studies for Teachers. 5 hours.

See EEN 507.

570F. (FR) History of the French Language. 5 hours.

See FR 570F.

570P. (POR) History of the Portuguese Language. 5 hours.

See POR 570P.

570S. (SP) History of the Spanish Language. 5 hours.

See SP 570S.

MATHEMATICS (MAT)

All mathematics majors must complete the calculus sequence (through MAT 255 or 265H), and should do so as soon as possible during the freshman-sophomore years. These courses (and lower numbered mathematics courses) cannot be used as part of the major program of study.

The 40-hour Major Program may include MAT 256 and MAT 358 but must include (a) at least two 3-quarter sequences and one 2-quarter sequence from: MAT 403-404-405, 410-411-412, 414-415-416, 414-435-436, 420-421-422, 440-441-442, 453-454-455; (b) sufficiently more courses, subject to approval of the advisor, to bring the number of hours up to 40.

The total program must be approved by an advisor.

100. Basic Algebra. 5 hours.

Basic algebraic manipulations with rational expressions, and exponents; solutions of quadratic equations and systems of linear equations. Functions and graphs.

103. Fundamentals of Mathematics for Business. 5 hours.

Prerequisite: Score of 450 or better on the mathematics achievement test or credit for or exemption from MAT 100 or SAT Math score of 500 or better.

An introduction to the mathematical analysis of problems in management and economics.

105. Introduction to Mathematics. 5 hours.

Prerequisite: Completion of or exemption from MAT 100.

A course for non-science majors designed to give the student an insight into the nature and scope of mathematics rather than to polish familiar techniques.

106. Introduction to Mathematics II. 5 hours.

Prerequisite: MAT 105.

A continuation of MAT 105.

109. Trigonometry. 5 hours.

Prerequisite: MAT 100.

Classical trigonometry with an emphasis on applications; some material of analytic trigonometry. Credit for both MAT 109 and MAT 101 will not be allowed.

115H. Freshman Honors Mathematics. 5 hours.

Not open to students with credit for MAT 105. Prerequisite: Two years of high school algebra and permission of the Honors office.

Conceptual aspects of modern mathematics, non-routine problems involving mathematical reasoning, methods of stating problems in mathematical language. Intended for talented non-science majors.

116. Precalculus Mathematics. 5 hours.

Prerequisite: Two years of high school algebra or permission of department.

For those students who intend to take calculus. The concept of function, intensive study of polynomial, rational, exponential, logarithmic, and trigonometric functions, and applications. Credit for both MAT 109 and 116 will be allowed.

120H. Mathematical Models of the Real World. 5 hours.

Not open to students with credit for MAT 105. Prerequisite: MAT 100.

A study of the geometry of regular figures with applications to crystallography and sphere-packing, followed by an introduction to graph theory with application to the real world.

121H. Mathematical Models of the Real World. 5 hours.

Not open to students with credit for MAT 106. Prerequisite: MAT 120H.

A continuation of MAT 120H. A study of difference and differential equations with substantial applications to the real world.

205, 206. Mathematics for Elementary Teachers. 5 hours.

A two quarter sequence in mathematics appropriate to the needs of the elementary school teacher.

207. Mathematical Analysis for Business I. 5 hours.

Not open to students with credit in MAT 253. Prerequisite: MAT 103.

A sequel to MAT 103, including an introduction to the calculus with applications to problems in management and economics.

208. Mathematical Analysis for Business II. 5 hours.

Not open to students with credit for MAT 254. Prerequisite: MAT 207.

A sequel to MAT 207, including integral calculus with applications to problems in the physical world. This course is recommended for students in the more mathematical areas of business such as management and economics.

253. Analytic Geometry and Calculus. 5 hours.

Prerequisite: MAT 116 or permission of department.

Introductory differential calculus and applications.

254. Calculus. 5 hours.

Prerequisite: MAT 253.

Introductory integral calculus and applications.

255. Calculus. 5 hours.

Prerequisite: MAT 208 or 254.

Multivariable calculus, introductory vector calculus, advanced analytic geometry, infinite series, applications.

256. Introduction to Linear Algebra. 5 hours.

Prerequisite: MAT 208 or 254.

An elementary introduction to real vector spaces, linear transformations and matrices with emphasis on their interpretation and computational aspects.

263H. Calculus (Honors). 5 hours.

Not open to students with credit for MAT 253. Prerequisite: MAT 116 and permission of the Honors office.

A study of differential calculus parallel to that in MAT 253, but with greater depth and wider range of applications.

264H. Calculus (Honors). 5 hours.

Not open to students with credit for MAT 254.
Prerequisite: MAT 253 or 263H and permission of the Honors office.

The topics of integral calculus are treated with more depth and wider range of applications than in MAT 254.

265H. Calculus (Honors). 5 hours.

Not open to students with credit for MAT 255.
Prerequisite: MAT 254 or 264H and permission of the Honors office.

The material covered in MAT 255, presented with greater depth and wider range of applications.

358. Introduction to Differential Equations. 5 hours.

Prerequisite: MAT 208 or 254.

Solution techniques for first order ordinary differential equations, second order linear differential equations, series solutions, applications in biological and physical sciences.

401. Differential Equations. 5 hours.

Prerequisite: MAT 254.

Elementary differential equations with applications to geometry and physics. Intended for students in Agricultural Engineering.

403. Numerical Analysis I. 3 hours.

Prerequisite: MAT 255, CSC 500, or STA 431; recommended corequisite: MAT 256.

Iterative techniques for the numerical solution of non-linear equations; polynomial interpolation; numerical integration; error analysis; digital computer problems and applications.

404. Numerical Analysis II. 3 hours.

Prerequisite: MAT 403; recommended corequisite: MAT 358.

Numerical solution of systems of linear equations, matrix inversion, eigenvalues, numerical solution of ordinary differential equations, and digital computer applications.

405. Numerical Analysis III. 3 hours.

Prerequisite: MAT 404.

Iterative methods for the solution of systems of non-linear equations; splines; linear and convex programming; digital computer applications.

410, 411, 412. Advanced Calculus. 3 hours each.

Prerequisite: MAT 255 and 256.

The concepts, methods, and applications of advanced multivariable calculus. Partial differentiation, implicit functions, multiple integrals, line and surface integrals, differential forms and the classical integral theorems of vector analysis. Infinite series, Fourier series, improper integrals, special functions. The

calculus of variations. This course emphasizes the conceptual understanding of multivariable calculus that is required for the solution of concrete problems and applications to other areas.

414, 415, 416. Introductory Topology. 3 hours each.

Prerequisite: MAT 255.

An introductory course in point set topology.

420, 421, 422. Introduction to Methods of Applied Mathematics. 3 hours each.

Prerequisite: MAT 255 and 358.

The construction of mathematical models for applied problems in terms of ordinary and partial differential equations. The standard methods for the solution of the boundary value problems and partial differential equations of applied mathematics. Solution by series, Fourier series, Bessel functions, Legendre polynomials. Laplace and Fourier transforms. Variational methods. Complex variable techniques. This course emphasizes the use of advanced mathematical methods for the solution of "real world" problems from a variety of scientific areas.

423. Mathematical Models in Biology I. 3 hours.

Prerequisite: MAT 253 and 254.

Construction, use and evaluation of mathematical models for the biological sciences. Compartmental flow models, dynamic system models, discrete and continuous models, deterministic and stochastic models. Emphasis on construction and use of models by students in their own research.

424. Mathematical Models in Biology II. 3 hours.

Prerequisite: MAT 423.

A continuation of MAT 423, studying specific models and related mathematics more thoroughly, as determined by the interests of those enrolled. More emphasis on model use and evaluation.

427. Discrete Models. 3 hours.

Prerequisite: MAT 256 or 442.

An introduction to the theory of directed graphs with applications to the social and biological sciences.

428. Discrete Models. 3 hours.

Prerequisite: MAT 427.

Applications of graph theory to traffic flow, ecology, energy.

429. Discrete Models. 3 hours.

Prerequisite: MAT 428.

The mathematics of individual and group decision making. Arrow's theorem, utility functions, expected utility, conjoint measurement.

431. Theory of Numbers. 5 hours.

Prerequisite: MAT 254.

An elementary course in number theory.

432. Theory of Numbers II. 5 hours.

Prerequisite: MAT 431.

A continuation of MAT 431.

435, 436. Elementary Differential Topology. 3 hours each.

Prerequisite for 435: MAT 255 and 256 and 414.

Prerequisite for 436: MAT 435.

Differential calculus in $\mathbb{R}^n$, manifolds in Euclidean space. Fundamental ideas of transversality, homotopy, and intersection theory. Differential forms, integration on manifolds, Stokes' theorem, deRham cohomology. Topics from differential geometry.

440. Introduction to Higher Algebra. 3 hours.

Prerequisite: MAT 256.

An introductory course in group theory. Examples of groups, subgroups, quotient groups, homomorphism theorems, permutation groups.

441. Introduction to Higher Algebra. 3 hours.

Prerequisite: MAT 440.

An introductory course in ring and field theory. Examples of rings, ideals, quotient rings, homomorphism theorems, polynomial rings, field extensions, constructible numbers, some Galois Theory.

442. Introduction to Higher Algebra. 3 hours.

Prerequisite: MAT 441.

A course in the theory of vector spaces and linear transformations. A more rigorous and deeper treatment than MAT 256. Basis and dimensions of vector spaces, characteristic roots, vectors and equation of a linear transformation, canonical forms, and determinants.

445. Applied Linear Algebra. 3 hours.

Prerequisite: MAT 256.

A course treating those aspects of linear and matrix algebra found to be frequently useful in a variety of non-mathematical fields. Topics selected from: solution of systems of linear equations (direct and iterative); calculation of eigenvalues; generalized inverses; convexity; properties of non-negative matrices.

447. (CSC) The Design and Analysis of Computer Algorithms I. 3 hours.

Prerequisite: MAT 256, 358, and any programming course or experience.

Computer models, design of algorithms, sort/order problems.

448. (CSC) The Design and Analysis of Computer Algorithms II. 3 hours.

Prerequisite: MAT (CSC) 447.

Integer and polynomial arithmetic, pattern recognition, algorithms on graphs.

449. (CSC) The Design and Analysis of Computer Algorithms III. 3 hours.

Prerequisite: MAT (CSC) 448.

Matrix operation, the fast Fourier transform, NP-complete problems, intractable problems.

453, 454, 455. Introduction to Analysis. 3 hours each.

Prerequisite: MAT 255.

An introductory course in functions of a real variable; elementary topology of metric spaces; continuous functions; differentiation and Riemann integration; measure theory and the Lebesgue integral.

459. Vector Analysis. 5 hours.

Prerequisite: MAT 255 and 256.

Calculus of vector functions. Line and surface integrals. Green's theorem, the divergence theorem, Stokes' theorem and physical applications. (Winter quarter.)

460. Elementary Differential Equations, I. 3 hours.

Prerequisite: MAT 256 and 358.

Higher order linear differential equations. Laplace transform method, introduction to numerical methods, applications.

461. Elementary Differential Equations, II. 3 hours.

Prerequisite: MAT 256 and 358.

Systems of first order linear differential equations, nonlinear differential equations and stability, applications to biological systems.

465. Introduction to Complex Variables. 5 hours.

Prerequisite: MAT 255.

Introductory course in complex variable theory, with applications. (Spring quarter.)

467. Introduction to Combinatorics. 3 hours.

Prerequisite: MAT 256.

An elementary introduction to combinatorial thinking, including basic counting principles, binomial coefficients, and recurrence relations. This course is recommended for students in mathematics, computer science, and mathematics education.

471, 472, 473. (STA) Introduction to Probability Theory. 3 hours each.

Prerequisite: MAT 255.

Probability axioms, combinatorial analysis, random variables, univariate and multivariate distributions, expectation, conditional distributions, independence, law of large

numbers and central limit theorems, random walks, Markov chains and processes, Brownian motion, branching and renewal processes, diffusion processes. Applications.

477. Mathematical Methods of Operations Research. 3 hours.

Prerequisite: MAT 256.

Corequisite: A programming course.

This first of three quarters devoted to the mathematical methods of operations research is devoted to the theory and applications of linear optimization, including its foundations, the Simplex algorithm and duality.

478. Mathematical Methods of Operations Research. 3 hours.

Prerequisite: MAT 477 and 255.

Second quarter of sequence; devoted to non-linear programming, Kuhn-Tucker conditions, convex programming, quadratic programming, geometric programming; applications will be interspersed through development. No knowledge of computer programming needed in course.

479. Mathematical Methods of Operations Research. 3 hours.

Prerequisite: MAT 478.

Third quarter in the sequence. Topics covered to be selected from the areas of integer programming, net work flows and stochastic models.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

502. Basic Ideas of Arithmetic. 5 hours.

Prerequisite: MAT 100 or two years teaching experience.

Designed to give elementary teachers a clear understanding of the fundamental ideas of arithmetic. Operations of arithmetic will be studied in several number systems. Cannot be used as part of 40 hours in AB/BS Mathematics major program.

503. Basic Ideas of Algebra and Geometry. 5 hours.

Prerequisite: MAT 502.

A continuation of MAT 502, designed to give elementary teachers a clearer understanding of some of the important ideas of algebra and

geometry. Cannot be used as part of 40 hours in AB/BS Mathematics major program.

510. Fundamental Ideas of Algebra. 5 hours.
Prerequisite: MAT 100-109 and either two mathematics courses numbered 200 or above or two years teaching high school algebra.

A course designed to help teachers of high school algebra. It will stress those fundamental ideas, some of which are modern, which determine the structure of elementary algebra. Cannot be used as part of 40 hours in AB/BS Mathematics major program.

514. Elementary Set Theory for Teachers. 5 hours.

Prerequisite: MAT 254 or two years experience as a mathematics teacher.

An elementary course in the theory of sets. Contains applications to topology. Cannot be used as part of 40 hours in AB/BS Mathematics major program.

516. Modern Algebra for Teachers. 5 hours.

Prerequisite: MAT 100-109 and either two mathematics courses numbered 200 or above or two years teaching high school algebra.

An introduction to matrices, vectors and linear programming. Cannot be used as part of 40 hours in AB/BS Mathematics major program.

520. Foundations of Geometry. 3 hours.

Prerequisite: MAT 100-109 or 116 or two years of teaching high school geometry.

A course in more advanced elementary geometry especially designed for prospective teachers of secondary school mathematics.

521. Advanced Topics in Geometry. 3 hours.

Prerequisite: MAT 520.

A continuation of MAT 520.

522. Transformation Geometry. 3 hours.

Prerequisite: MAT 520.

Transformation geometry.

556. Fundamentals of Probability and Statistics. 5 hours.

Prerequisite: Two mathematics courses numbered 200 or above or two years experience teaching high school mathematics.

Fundamental ideas of probability with particular emphasis on their applications in statistics. Cannot be used as part of 40 hours in AB/BS Mathematics major program.

MICROBIOLOGY (MIB)

Requirements for a major in microbiology:

The Bachelor of Science degree with a major in Microbiology requires 20 hours of Microbiology including MIB 350-350L, 409

and other 400 level Microbiology courses with the exception of MIB 400 and 402. MIB 350-350L, Introductory Microbiology, is a prerequisite for all Microbiology courses except MIB 250-250L and 402. Introductory Biochemistry (BCH(BIO) 310) is required of all majors.

Students majoring in Microbiology with the intention of applying for examination for admission to the National Registry of Microbiologists should consult the departmental undergraduate advisor concerning courses required for eligibility.

Programs of study are available for pre-medical, pre-dental and pre-veterinary medicine students.

250-250L. Microbiology and Health Care. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: 10 hours of biological science and 10 hours of physics or chemistry. Specifically for nursing students but open to others with permission of department.

An introduction to infectious diseases emphasizing the nature of the organisms, the interrelationship of microorganisms and human hosts, the prevention and control of infectious diseases and a description of the important infectious diseases of humans. (Spring quarter.)

350-350L. Introductory Microbiology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: 10 hours of biological science, 5 hours of physical science, organic chemistry, or concurrently.

A survey of microorganisms with special emphasis on bacteria and their relationship to man.

357-357L. (DS) Dairy Microbiology. 5 hours. See DS 357.

360. Introduction to Experimental Microbiology. 1-10 hours; maximum 5 hours per quarter. Daily tutorial, library or lab work.

Prerequisite: 10 hours of microbiology.

An introduction to the microbiological research literature, laboratory methods and reporting techniques. Prearrangement with departmental advisor necessary.

399H. Microbiology's Contribution to Scientific Thought (Honors). 5 hours.

This course provides opportunity for Honors students to participate in a general microbiology colloquium.

400. History of Microbiology. 5 hours.

Prerequisite: 10 hours of microbiology.

Examination of the development of the science of microbiology with particular reference to contributions of scientists in microbi-

ology and allied fields to intellectual thought and development. Significant literature of past and present is reviewed and discussed.

402. Microbiology for Pharmacy Students. 5 hours.

Prerequisite: BCH (BIO) 310 or PHR 347.

For pharmacy students but open to others with permission of department.

The fundamental nature of microorganisms; host-parasite relationships and immunity; transmission, pathogenesis, diagnosis, and control of the major infectious diseases of man. No credit toward the major in microbiology.

404. Microbiology of Anaerobes. 5 hours.

Prerequisite: MIB 409 or BCH 402 or permission of department.

The course will cover bacterial adaptations to life without oxygen; the differences between facultative and strict anaerobes; distribution, taxonomy, and physiology of anaerobes; fermentations and pathways; anaerobic methodology; industrial applications of anaerobes.

407-407L. (FS) Microbiology of Foods. 5 hours. See FS 407-407L.

409. Fundamentals of Microbiology. 5 hours.

Prerequisite: MIB 350-350L.

Fundamental principles and techniques of general microbiology. Attention will be given to growth, nutrition, inheritance, ultrastructure and physiology of representative types of microorganisms.

410-410L. Immunology. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: BIO 101-101L, BCH (BIO) 310, or their equivalents.

Immune defense mechanisms mediated by humoral or cellular mechanisms are discussed. The synthesis, structure and action of antibodies and lymphokines; the various forms of cytotoxic reactions and hypersensitivities, the regulatory mechanism involved, and their clinical importance in transplantation, tumor immunology, autoimmune and immune disorder diseases are studied.

413-413L. Advances in Human Immunology. 5 hours.

Prerequisite: MIB 410-410L.

The most recent data on the humoral and cellular immune responses in humans will be discussed. The molecular, membranal and cellular events involved in the generation, regulation and production of antibodies and lymphokines, specific and nonspecific cytotoxic reactions and their importance in normal and pathological conditions will be studied.

414. Advanced Laboratory Methods in Microbiology. 5 hours.

Prerequisite: MIB 350-350L; 409 recommended. Instruction in the design and execution of experiments will be provided to acquaint the student with experimental techniques necessary for basic studies on bacteria. Attention will be given to elective culture techniques, growth and enumeration of bacteria, bioassay techniques, effects of irradiation and of chemical mutagens, selection of mutants, isolation of DNA, and enzymatic assay techniques.

421-421L. (FS) Environmental Microbiology. 5 hours.

See FS 421-421L.

422-422L. Pathogenic Bacteriology. 5 hours.

Three lectures and two 2-hour lab periods. Not open to students with credit for MMB 422-422L.

Prerequisite: MIB 350-350L, 409.

Studies on the morphological, cultural and physiological properties of the important pathogenic bacteria and their relation to human health and disease.

450. Virology. 5 hours.

Prerequisite: BCH (BIO) 310, MIB 409 or 414. An introduction to the viruses, chlamydiae and rickettsiae. Emphasis is on laboratory methodology, genetics and physiology of viral reproduction, and viral-induced malignancy.

452-452L. (DS) Microbiology for Sanitarians. 5 hours.

See DS 452-452L.

453-453L. (DS) Microbiology of Fermented Dairy Foods. 5 hours.

See DS 453-453L.

459-459L. (EHS) Microbiology of Water and Wastewater. 5 hours.

See EHS 459-459L.

461-461L. (AGY) Soil Microbiology. 5 hours.

See AGY 461-461L.

462. Microbial Ecology. 5 hours. Three lectures or recitations and two 3-hour lab periods.

Prerequisite: MIB 350-350L or permission of department.

Emphasizes the roles of microorganisms in ecosystems. Attention is given to the examination of nutrient cycles, methods of microbial analysis and the functional roles of microorganisms.

470-470L. Medical Mycology. 5 hours. Three lectures or recitations and three 2-hour lab periods.

Prerequisite: MIB 350-350L, or equivalent.

A survey of the yeasts, molds, and actinomycetes most likely to be encountered by a medical mycologist in a diagnostic laboratory with special emphasis on the organisms which are pathogenic for man and other animals.

480. Microbial Genetics. 3 hours.

Prerequisite: BIO (MPG) 320 or equivalent; MIB 350-350L or equivalent; BCH (BIO) 310 or equivalent.

This course will cover the mechanisms of inheritance, recombination, and the regulation of gene expression in bacteria and bacteriophages. Limited consideration will be made of the genetics of free-living, lower eucaryotes (fungi), with primary emphasis on the genetics of procaryotes.

480L. Microbial Genetics Laboratory. 2 hours.

Prerequisite: BIO(MPG) 320 or equivalent; MIB 350-350L or equivalent; BCH (BIO) 310 or equivalent.

Corequisite: MIB 480 or equivalent.

Laboratory will emphasize mutant isolation and genetic mapping using conjugation, transduction and transformation. "Fusion" strains will be constructed to examine regulation of gene expression. A credit lecture is offered in conjunction with this course. Graduate students may take the lab portion without the lecture if they have had previous microbial genetics course work.

481. Microbial Biogeochemistry. 5 hours.

Prerequisite: MIB 350-350L and BCH (BIO) 310 or equivalent, or permission of department; MIB 462 and 409 are recommended.

An intensive examination of the microbial processes which are or have been important in modifying the earth's lithosphere, hydrosphere and atmosphere. Emphasis is placed on microbially mediated precipitation and solubilization of minerals, cycling of dissolved and particulate organic matter in natural waters, and the physiological ecology of microorganisms adapted to environments of extreme pH, temperature, and pressure, etc.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

MOLECULAR AND POPULATION GENETICS (MPG)

Requirements for a Major in Genetics: BIO 101-101L, 102-102L; MAT through 254; CHM 137 and 137L, 138 and 138L, 139 and 139L (or 121 and 121L, 122 and 122L, 123 and 123L); CHM 340 and 340L, 341 and 341L (or 240 and 240L, 241 and 241L); PCS 137-137L, 138-138L (or 127-127L, 128-128L); MPG(BIO) 320 and 321; MPG 420; MPG 495 (2 hours); plus one additional MPG course; BCH(BIO) 310; 15 additional hours in courses from the Division of Biological Sciences, as determined in consultation with the undergraduate program advisor.

320. (BIO) Genetics. 5 hours.
See BIO 320.

321. (BIO) Experimental Genetics. 5 hours.
See BIO 321.

411-411L. (ZOO) Cytogenetics. 5 hours. Three lectures and two 3-hour lab periods.
Prerequisite: BIO (MPG) 320 or equivalent.
The behavior of chromosomes and their relationship to genetic concepts. (Spring quarter)

414. Population Genetics. 5 hours.
Prerequisite: MAT 254 and either BIO (MPG) 320, BIO 350, or permission of department.
The genetic structure of populations and the dynamics of genetic change within them. (Fall quarter 1985)

415. Topics in Evolutionary Theory. 5 hours.
Prerequisite: BIO (MPG) 320 or BIO 360 or permission of department.
Theory and data pertaining to the evolution of genetic systems, molecular evolution, coevolution, evolution of social behavior. (Winter quarter 1985; not offered in 1984)

416. Ecological Genetics. 5 hours. Three lectures and two 2-hour lab periods.
Prerequisite: BIO (MPG) 320 and BIO 350.
Genetic diversity and variation in relation to the environment; the interplay between ecological and genetical processes within populations. (Spring quarter 1985; not offered in 1984)

420. Advanced Genetics. 5 hours.
Prerequisite: BIO (MPG) 320.
This course will discuss a limited number of procaryotic, fungal, and mammalian genetic systems which form the basis of our understanding of molecular genetics. Techniques used in the analysis of the structure and function of viral and eucaryotic genomes will be emphasized. (Fall quarter)

495. Senior Seminar in Genetics. 1 hour per quarter; maximum of 3 hours.

Prerequisite: BIO (MPG) 320. Senior standing; permission of department.

Discussion and critical appraisal of reports of original research and/or surveys of the technical literature in genetics. Students will be responsible for oral presentations on current topics. Seminar will be directed by an assistant professor or higher. (Fall, Winter, and Spring quarters)

496. Independent Reading and/or Projects. 1-5 hours per quarter; maximum of 10 hours.

Prerequisite: BIO (MPG) 320. Junior or senior standing.

This course affords students of upper division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

496H, 497H, 498H. Independent Readings and/or Projects. 5 hours.

Prerequisite for 496H: BIO(MPG) 320.

Prerequisite for 497H: MPG 496H.

Prerequisite for 498H: MPG 497H.

These courses afford Honors students of upper division standing the opportunity to engage in individual study, reading, or research projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

Prerequisite: MPG 496H; senior standing; permission of department.

This course provides the opportunity for an Honors student to write an Honors thesis under the guidance of a faculty member.

MUSIC (MUS)

Theoretical Courses

110. Theory: Fundamentals of Music. 3 hours.
Introduction to harmony and ear training. Two ear training labs, three classes.

111. Theory: Elementary Ear Training. 3 hours.
Prerequisite: MUS 110.
Melodic and rhythmic materials. Five classes.

212. Theory: Elementary Harmony. 3 hours.
Prerequisite: MUS 111.
One keyboard lab, one ear training lab in harmonic materials, three classes.

213. Theory: Advanced Harmony. 3 hours.
One keyboard lab, one ear training lab in harmonic materials, three classes.

214. Theory: Advanced Ear Training. 3 hours.
Melodic and rhythmic materials. Five classes.

307. Electronic Music: Literature and Practice. 5 hours.

Not open to students with credit for MUS 479.
Prerequisite: Sophomore standing.
A survey of the history, literature, and techniques of electronic music. This course is designed for non-majors.

309. Theory: Contemporary Materials and Techniques. 3 hours.

One ear training lab in contemporary materials, one composition seminar, three classes.

310. Introduction to Counterpoint. 3 hours.

Prerequisite: MUS 309.

Species counterpoint. Introduction to contrapuntal techniques. Some practice writing.

324. Instrumentation. 2 hours.

Prerequisite: MUS 309.

Transposition, characteristics and range of the instruments of the orchestra and band. Scoring for miscellaneous small ensembles of these instruments.

325. Orchestral Arranging. 2 hours.

Prerequisite: MUS 324.

Arranging for the symphony orchestra.

326. Band Arranging. 2 hours.

Prerequisite: MUS 324.

Arranging for concert band.

327. Vocal Arranging. 2 hours.

Prerequisite: MUS 324.

Arranging for voices and accompanying instruments.

355. Music Theory for Non-Music Majors. 5 hours.

Studies in music fundamentals, harmony, rhythm, and ear training for the amateur musician.

470. Form and Analysis. 5 hours.

Prerequisite: MUS 310.

Harmonic and polyphonic forms analyzed. Special stress given sonata forms. Students encouraged to write originally in forms thus analyzed.

471. 16th-Century Counterpoint. 5 hours.

Prerequisite: MUS 310.

The contrapuntal style and techniques of the 16th Century, acquaintance with species counterpoint.

475. 18th-Century Counterpoint. 5 hours.

Prerequisite: MUS 310.

Late Baroque contrapuntal techniques and styles.

479. Introduction to Electronic Music. 3 hours.

Prerequisite: MUS 309.

An introductory course in electronic music systems, composition and literature.

480. Acoustics of Music. 3 hours.

Prerequisite: Permission of school.

A study of the physical nature of sound production and transmission with particular application to musical instruments, the voice, and architecture.

510. Advanced Theory. 3 hours.

Prerequisite: MUS 310.

A survey of harmonic and contrapuntal resources, with emphasis upon aural and visual analysis.

Music History and Literature

122. Introduction to Music Literature. 3 hours.

An introductory survey of representative examples of Western music from the Middle Ages to the present.

300. Appreciation of Music. 5 hours.

Not open to students with credit for MUS 359H.

A study of masterpieces of music literature, with particular reference to those being performed on campus during the current quarter.

321. History of Music I. 3 hours.

Prerequisite: MUS 122.

The history of Western music from its beginnings to 1600 (Middle Ages and Renaissance).

322. History of Music II. 3 hours.

Prerequisite: MUS 122.

The history of Western music from 1600 to 1800 (the inception of the Baroque era through the Classical period).

323. History of Music III. 3 hours.

Prerequisite: MUS 122.

The history of Western music from the works of Beethoven to the present day.

359H. History and Analysis of Musical Style (Honors). 5 hours.

Not open to students with credit for MUS 300.

A study of the history and development of music with particular emphasis upon the relationship of music to the important movements in Western civilization.

420. Ancient and Medieval Music. 5 hours.

A survey of music from the birth of Christianity to ca. 1400, with an introduction to the place of music in Greek and Roman societies. (Offered alternate years.)

421. Music in the Renaissance Period. 5 hours.

A music history and literature course covering the Renaissance period, 1400-1600. (Offered alternate years.)

422. Music in the Baroque Period. 5 hours.

A study of musical styles and forms from Monteverdi through Bach and Handel. (Offered alternate years.)

423. Music in the Classic Period. 5 hours.

A study of chamber, orchestral, keyboard, and operatic works from the middle and late 18th Century. (Offered alternate years.)

424. Music in the Romantic Period. 5 hours.

An intensive study of the Romantic period; emphasis on the development of the song, symphony, chamber music, and opera. (Offered alternate years.)

430. Keyboard Literature. 3 hours.

A survey of music composed for harpsichord and piano from the Renaissance period to the present day.

431. Song Literature. 3 hours.

An introduction to the major styles of song composition from the time of the Troubadours to the present.

432. String Literature. 3 hours.

The study of string music from the Italian Baroque to the present day.

436. Opera Literature. 3 hours.

The study of representative operas from the Baroque era to the 20th Century.

437. Organ Literature. 3 hours.

Prerequisite: MUS 181B or equivalent.

A survey of the development of organ music in relation to the development of the instrument itself.

440. Non-Western Music. 5 hours.

An introduction to the music of non-European cultures, including those of the Far East, Near East and Africa.

441. Bibliography. 5 hours.

An introduction to the existing body of materials, including music and books on music, which serves as the basis for musical research, and to the procedures and techniques used in research.

458. Wind Instrument Literature. 3 hours.

A survey of the solo, sonata, and ensemble music composed for wind instruments, from the Baroque period to the present.

462. Modern Music. 5 hours.

A literature course illustrating modern trends in music from Schoenberg, Stravinsky, Hindemith, Bartok, and others.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual

research in the field of his/her major or in a closely related field.

Music Education

200. Careers in Music. 1 hour.

Career development and life planning in music and associated fields.

201. Introduction to Music Education. 1 hour.

Introduction to the professional responsibilities of the music educator.

240 through 244. Basic principles and methods of instrumental performance and pedagogy.

240. Guitar Class. 1 hour. May be taken two times.

241A. String Class (Violin and Viola). 1 hour. May be taken two times.

241B. String Class (Cello and Double Bass). 1 hour. May be taken two times.

242A. Woodwind Class (Flute). 1 hour.

242B. Woodwind Class (Oboe). 1 hour.

Prerequisite: Previous woodwind experience.

242C. Woodwind Class (Clarinet). 1 hour.

242D. Woodwind Class (Bassoon). 1 hour.

Prerequisite: Previous woodwind experience.

242E. Woodwind Class (Saxophone). 1 hour.

243A. Brass Class (Trumpet). 1 hour.

243B. Brass Class (Horn). 1 hour.

243C. Brass Class (Trombone/Baritone). 1 hour.

243D. Brass Class (Tuba). 1 hour.

244. Percussion Class. 1 hour. May be taken two times.

245ABCDEFGHIJK. Voice Class. 1 hour each.

Basic principles and methods of voice production and their application to glee clubs and choruses.

246ABCDEFGHIJK. Piano Class. 1 hour each.

A sequence for music majors using the piano as a secondary instrument to develop expressive performance through conceptual analysis and pianistic skills.

247. Private Applied Teaching. 1 hour. May be taken three times.

Prerequisite: MUS 110 and 122.

Methods of teaching elementary and intermediate level students individually by voice and instrument majors under faculty supervision.

248. Class Applied Teaching. 1 hour. May be taken three times.

Prerequisite: MUS 110 and 122.

Methods of teaching elementary and interme-

diate level students in class approaches to piano and other selected areas by music majors under faculty supervision.

303. Music Skills and Fundamentals for Elementary School Teachers. 3 hours.

For education majors only. Introduction to the basic skills and fundamentals of music for the elementary classroom teacher. Meets five times a week.

305. Music Methods and Materials for Early Childhood Teachers. 3 hours.

Prerequisite: MUS 303.

Study of music teaching techniques, methods and materials for the early childhood teacher.

312. Music for Elementary Grades. 5 hours.

Prerequisite: MUS 309, admission to teacher education, and five hours of educational psychology.

Methods for music majors.

313. Music in Junior and Senior High Schools. 5 hours.

Prerequisite: MUS 309, admission to teacher education, and five hours of educational psychology.

Methods for music majors.

314. Music for Middle School. 5 hours.

Prerequisite: Admission of College of Education students to middle school music program by the School of Music. An elective course for music majors.

Study of techniques, methods and materials for the middle school music teacher.

345P. Vocal Pedagogy. 1 hour.

Prerequisite: MUS 282C.

The course is designed to explore the methods and materials available for the prospective teacher of singing.

361. Elementary Conducting. 3 hours.

Basic principles, techniques, and methods of conducting and interpretation.

362. Choral Conducting. 3 hours.

Prerequisite: MUS 361.

Rehearsal, interpretive and conducting techniques, and methods for choral organizations.

363. Band Conducting. 3 hours.

Prerequisite: MUS 361.

Rehearsal, interpretive and conducting techniques, and methods for band organizations.

364. Orchestral Conducting. 3 hours.

Prerequisite: MUS 361.

Rehearsal, interpretive and conducting techniques, and methods for orchestral organizations.

400. Special Problems in Music. 1-10 hours.

Prerequisite: Permission of school.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. Projects may involve the study and analysis of music and problems related to music, as approved by the department.

512. Advanced Techniques for Teaching Music in the Elementary School. 3 hours.

Prerequisite: MUS 312.

Course includes: (1) formulation of behavioral objectives for elementary school music; (2) new materials and methods for teaching elementary music; (3) the conceptual structure of music as it relates to the activities of the elementary music class; (4) problems of supervision; and (5) evaluation of student progress.

514. Workshop for Teachers in Music Education. 5 hours.

Prerequisite: MUS 305 or equivalent.

Advanced study of techniques, methods, and materials for the elementary school music program.

515. Early Childhood Musical Development. 5 hours.

Prerequisite: For majors in music education, early childhood education, elementary education or child development. Formal music training is not required, but a general knowledge of the fundamentals of music (pitch, rhythm, timbre, expression) is expected.

A study of the musical development of children from birth through age eight years. This course examines research dealing with auditory perception, auditory discrimination, responses of children to music, modes of learning music, and children's acquisition of musical performance skills and understandings.

524. Musical Productions for the Public Schools. 5 hours. Lecture-laboratory.

Prerequisite: Senior level or for music majors. Techniques and methods for directing and producing musical comedy, operetta, and light opera in the public schools. Includes a survey of available materials for elementary, middle, and high school levels and complete production procedures for musical theatre — stage and musical directing, choreography, scenery, lighting, costuming, and makeup.

525. Vocal Techniques for Non-Majors. 2 hours.

Vocal techniques, diction and ensemble preparation for singers with little or no previous vocal training. Admission by audition for the instructor.

526. Marching Band Techniques and Methods. 3 hours.

Prerequisite: Permission of department.
Methods and techniques for organizing and training marching bands. Planning music, drills, formations, and shows.

527. Computer-Assisted Instruction in Music. 3 hours.

Prerequisite: MUS 212 or equivalent.
Provides general background in computer-assisted instruction as a continuation of pedagogical techniques in music. Also provides practical experience in designing, programming, and testing CAI music lessons on the University of Georgia's CYBER 6400 computer or on microcomputers such as the PET 2001-8 or Apple II.

531. Problems in Vocal Music Education. 3 hours.

Prerequisite: MUS 312 and 313.
Study of voice problems from classroom point of view beginning in elementary and continuing through secondary school; technique used in choral ensembles; evaluation of present concepts and practices.

532. Problems in Instrumental Music Education. 3 hours.

Prerequisite: MUS 312 and 313.
Study of methods and techniques used for development of the instrumental music program beginning in elementary and continuing through secondary school; diagnosis of problems relating to strings, woodwinds, brasses, and percussion.

533. Music Administration and Supervision. 5 hours.

Prerequisite: Undergraduate requirements in education, MUS 312 and 313.
Administrative functions, procedures, and philosophies as they affect music instruction in schools and colleges.

534. Choral Music Material. 3 hours.

Prerequisite: MUS 312 and 313.
Study and evaluation of music literature available for use in public school at all levels of instruction; research in various media and schools of composition which can be adapted for school use.

535. Instrumental Music Material. 3 hours.

Prerequisite: MUS 312 and 313.
Evaluation of materials available at all levels of instruction for band, orchestra and chamber music; research in materials of various media and schools of composition which can be adapted for school use.

538. Advanced Conducting. 3 hours.

Prerequisite: MUS 362, 363, or 364.
An intensive study of choral and instrumental conducting methods and techniques with application in laboratory sessions.

547. Music for Exceptional Children. 5 hours.

Prerequisite: MUS 201 or 303 or EXC 500.
This course is designed to prepare teachers of exceptional children to teach music in special classrooms or in settings where exceptional children are integrated into the regular music classes.

562. Jazz Piano Improvisation Class. 3 hours.

Prerequisite: MUS 246F.
Application of skills and techniques in keyboard jazz playing based upon a knowledge of modern-popular harmonic and notational practices.

Music Therapy

540. Principles of Music Therapy I. 3 hours.

A study of music as human behavior, and its use with the handicapped and those suffering behavioral disorders.

541. Principles of Music Therapy II. 3 hours.

Prerequisite: MUS 540.
A study of the functions of the music therapist with emphasis on the use of music in a therapeutic environment.

542. Psychological Foundations of Music I. 3 hours.

A study of the acoustical and psychological aspects of music with emphasis upon problems of perception, experimental aesthetics, musical function, measurement and diagnosis of musical ability. The related literature of experimental investigation will be reviewed.

543. Psychological Foundations of Music II. 3 hours.

Prerequisite: MUS 542.
A laboratory and research course emphasizing acoustical and psychological aspects of music perception, experimental aesthetics, musical function, and measurement and diagnosis of musical ability.

544. The Influence of Music on Behavior. 5 hours.

Prerequisite: BIO 101-101L, 102-102L; PSY 423; ZOO 212-212L.

A study of the various physiological effects of music. The place of functional music in music education. Investigation of effective media and musical patterns. The relation of music to health. Music in industry.

545. Clinical Experience. 3 hours.

Prerequisite: Completion of junior year in Bachelor of Music with major in music therapy.

Three months work as a general aide in an approved psychiatric hospital for practical clinical experience.

546. Music in Recreation. 3 hours.

Experiences in elementary and secondary methods of teaching music from the perspectives of social and recreational instruments.

Jazz Studies

291G. Jazz Ensemble with Improvisation Laboratory. 1-6 hours; 1 hour per quarter.

301. Jazz History. 5 hours.

History of jazz with emphasis upon the evolution, structure, and techniques from the tribal music of Africa through the jazz of the turn of the century New Orleans to the present state of the art.

491G. Jazz Ensemble with Improvisation Laboratory. 1-6 hours; 1 hour per quarter.

506. Jazz Arranging. 3 hours.

Prerequisite: MUS 324. Permission of department.

Development of the ability to write for jazz combos and jazz bands.

Applied Music

The following courses are offered primarily for music majors, but a limited number of non-majors may be accepted when schedules permit. All music students should expect to participate in weekly seminars in their major performance media, and to attend recitals and concerts. Before registering for an applied music course, students must pass a qualifying audition on their instrument or voice. The one hour courses in applied music consist of one 25-minute private lesson per week. The two hour, three hour, four hour, and five hour courses consist of one 50-minute lesson or two 25-minute lessons per week.

181ABC. Applied Music. 1 hour each.

182ABC. Applied Music. 2 hours each.

183BC. Applied Music. 3 hours each.

184ABC. Applied Music. 4 hours each.

281ABC. Applied Music. 1 hour each.

Prerequisite: MUS 181C.

282ABC. Applied Music. 2 hours each.

Prerequisite: MUS 182C.

283ABC. Applied Music. 3 hours each.

Prerequisite: MUS 183C.

284ABC. Applied Music. 4 hours each.

Prerequisite: MUS 184C.

Junior recital for voice and composition majors in third quarter.

381ABC. Applied Music. 1 hour each.

Prerequisite: MUS 281C.

382ABC. Applied Music. 2 hours each.

Prerequisite: MUS 282C.

383ABC. Applied Music. 3 hours each.

Prerequisite: MUS 283C.

385ABC. Applied Music. 5 hours each.

Prerequisite: MUS 284C.

Junior recital for performance majors and senior recital for voice and composition majors in third quarter.

481ABC. Applied Music. 1 hour each.

Prerequisite: MUS 381C.

482ABC. Applied Music. 2 hours each.

Prerequisite: MUS 382C.

Music education students: senior recital in the second quarter. Music therapy students: senior recital in the third quarter.

483ABC. Applied Music. 3 hours each.

Prerequisite: MUS 383C.

Senior recital for B.F.A. students in third quarter.

485ABC. Applied Music. 5 hours each.

Prerequisite: MUS 385C.

Senior recital in third quarter.

Performing Organizations and Ensembles

288. Men's Glee Club. 1 hour.

Concentration on choral literature for men's voices from all periods of music history, including sacred, secular, folk, and popular music. Open to all University students who can qualify by audition. Three hours per week.

289. Women's Glee Club. 1 hour.

Concentration on choral literature for women's voices from all periods of music history, including sacred, secular, folk, and popular music. Open to all University students who can qualify by audition. Three hours per week.

290. Concert Band. 1 hour. Three periods per week.

A concert band open to all students who have had previous experience in instrumental music. (Offered Fall, Winter, and Spring quarters.)

291ABCDEF. Chamber Music Ensemble. 1 hour per quarter.

A. Strings. B. Piano. C. Brasses. D. Woodwinds.

E. Percussion. F. Opera Workshop.
Open to freshman and sophomore students who can qualify.

291K. Contemporary Chamber Ensemble. 1 hour.

Concentration on 20th-Century literature for small ensembles, including aleatoric and electronic literature. Open to students who can qualify.

387. University Symphony Orchestra. 1 hour.
Open to students who can qualify. Four hours per week.

388. University Chorus. 1 hour. Three hours per week.

Concentration on choral literature for mixed voices from all periods of music history, including both sacred and secular music. Open to all students.

389. Concert Choir. 1 hour.
Concentration on choral literature suitable to the medium-sized choral ensemble. Admission by audition only. Four hours per week.

390. University Band. 1 hour.
Open to students who can qualify. Four hours per week.

491ABCDEF. Chamber Music Ensemble. 1 hour per quarter.

A. Strings. B. Piano. C. Brasses. D. Woodwinds. E. Percussion. F. Opera Workshop.
Open to juniors and seniors.

491K. Contemporary Chamber Ensemble. 1 hour.

Concentration on 20th-Century literature for small ensembles, including aleatoric and electronic literature. Open to students who can qualify.

492AB. Advanced Accompanying. 1 hour per quarter for each suffix.

Prerequisite: Permission of school.
Practical experience in chamber music and accompanying.

590. Symphonic Wind Ensemble. 1 hour. Four hours per week.

Prerequisite: Admission by audition.
Mixed woodwind-brass-percussion ensemble for the study and performance of wind chamber compositions with concentration on advanced scores, including a substantial emphasis on contemporary music. Professional level experience.

591. Collegium Musicum. 1 hour.
A study of the interrelationship of music history, theory, and performance.

594. University Chamber Orchestra. 1 hour per quarter; maximum 18 hours. Three hours per week.

Prerequisite: A minimum of 60 hours of undergraduate fine arts/humanities courses and permission of school.

Orchestral ensemble for the study and performance of chamber compositions with concentration on advanced scores. Professional level experience.

PHILOSOPHY AND RELIGION

A major in philosophy ordinarily consists of 30 quarter-hours in philosophy and an additional 10 quarter-hours in philosophy or cognate areas such as religion, history, and psychology. Assuming PHY 101 is taken as part of the philosophy, religion, and fine arts requirement and PHY 110 is taken as part of the mathematics requirement for the A.B. degree, the initial 30 quarter-hours in philosophy would include PHY 305; 320; 322 or 323; and 460 or 461. Alternative programs of study are available.

A major in religion ordinarily consists of 40 hours (at least 20 of which must be in residence in courses numbered 300 or higher) in courses prefixed REL. Exceptions may be made by petition to the Religion Faculty. Of these hours, at least 5 hours must be in Biblical Religion, at least 5 hours must be in a Non-Western religious tradition, and at least 5 hours must be in Theology or Philosophy of Religion — all at a level of 300 or higher. REL 115, 116, and 225H are recommended to satisfy part of the philosophy, religion, and fine arts requirement, but are not considered part of either the major or minor.

A minor in philosophy or religion consists of 20 hours elected in courses numbered 300 or above. The Department should be notified by students who wish to minor in either field so that invitations to Departmental events can be issued.

All these programs of study are subject to approval by a major advisor. Students are urged to request an advisor as soon as they decide upon their major.

Philosophy (PHY)

101. Introduction to Philosophy. 5 hours.

A critical exploration of such topics as knowledge and belief, God and the problem of evil, freedom and determinism, the right and the good, language and meaning, mind and body, appearance and reality, and man and the world.

102. Rational Thinking. 5 hours.

Introduction to the principle and standards for thinking and communicating clearly and

effectively. Topics include: theories of meaning, uses of language, common causes of confusion and error in thought and argument, and evaluation of arguments.

110. Introduction to Deductive Logic. 5 hours.
A study of the methods and principles used to distinguish correct from incorrect deductive arguments, with emphasis upon contemporary techniques of analysis.

215H. The Fundamental Questions of Philosophy (Honors). 5 hours.

Not open to students with credit for PHY 101.
A study of the fundamental questions of philosophy and the answers given to those questions by the major schools of philosophical thought.

302. Existentialism. 5 hours.

An examination of European existentialism, as initiated by Kierkegaard and developed in this century by such figures as Sartre, Camus, Marcel, Jaspers, and Buber.

305. Introduction to Ethics. 5 hours.

A study of the major philosophical positions concerning right and wrong, ethical values, and moral responsibility. The relevance of moral philosophy to current issues of personal and social ethics will be discussed.

315H. Introduction to Ethics (Honors). 5 hours.
Not open to students with credit for PHY 305.
Honors equivalent of PHY 305.

320. History of Philosophy, Ancient. 5 hours.
Prerequisite: PHY 101 or permission of department.

A course in the primary works of the great ancient philosophers, especially the writings of Plato and Aristotle.

321. History of Philosophy, Medieval. 5 hours.
Prerequisite: PHY 101 or permission of department.

Selected readings in the works of the great medieval philosophers, especially St. Thomas Aquinas and St. Augustine.

322. History of Philosophy, Modern. 5 hours.
Prerequisite: PHY 101 or permission of department.

Traces the development of British and European philosophy up to the mid-19th Century.

323. History of Philosophy, Contemporary. 5 hours.

Prerequisite: PHY 101 or permission of department.

Readings in philosophers of the 19th and 20th Centuries.

368H. Introduction to Deductive Logic (Honors). 5 hours.

Not open to students with credit for PHY 110.
Honors equivalent to PHY 110.

403. Phenomenology: Existential and Non-existential. 5 hours.

Prerequisite: Recommended background — PHY 322 or equivalent.

A study of the starting points and basic method of phenomenology, considering both the fundamental positions of Husserl and their modification in the existential turn.

404. Classical American Philosophers. 5 hours.

Prerequisite: At least one course in philosophy other than PHY 110.

A study of the major writings of C.S. Pierce, William James, and John Dewey and their influence on the development of contemporary philosophy.

405. Ethical Theory. 5 hours.

Prerequisite: PHY 305, two other courses in philosophy, or permission of department.

A study of the nature and justification of fundamental ethical concepts and moral principles.

406. Social and Political Philosophy. 5 hours.

Prerequisite: At least one course in philosophy other than PHY 110.

Survey of such topics as the nature and function of society and the state, human freedom and rights, the bases of social and political obligations.

408. (REL) Philosophy of Religion. 5 hours.

Prerequisite: Junior standing or permission of department.

A critical study concerning the meaning, nature and validity of religious discourse, beliefs, and practices, involving theories concerning the existence and nature of God and man's relation to God.

411. Aesthetics. 5 hours.

A critical survey of philosophical theories about the arts (for example, painting, literature, and music). Attention will be given to such topics as the function of art in society and the problem of justifying aesthetic judgments.

414. Introduction to Philosophy of Language. 5 hours.

A critical study of topics such as formal and ordinary languages, meaning, reference, truth, definition, analyticity, ambiguity, metaphor, symbolism, and the uses of language.

416. Philosophy of Law. 5 hours.

Prerequisite: 10 hours of philosophy, political science or law.

A study of the nature and function of law with emphasis on the interpretation and application of the law in the judicial process. Readings in classical and contemporary schools of the philosophy of law.

418. Environmental Ethics. 5 hours.

Prerequisite: At least one course in philosophy.

A critical evaluation of major professional and nonprofessional writings in the field of environmental ethics.

432. Philosophy of Literature. 5 hours.

Prerequisite: At least one course in philosophy other than PHY 110 or at least one course in English or foreign literature at the 200 level or above.

A study of the philosophic questions reflected in selected classes of world literature. Attention will also be given to the nature, functions, and epistemic principles of the literary arts.

442. (LIN) Set Theory and Logic. 5 hours.

Prerequisite: PHY 110 or 10 hours of mathematics beyond MAT 100 or permission of department.

An introduction to the basic concepts of set theory, emphasizing the impact of the paradoxes of the infinite, Russell's paradox, and applications of set theory to the foundations of mathematics.

443. (LIN) Symbolic Logic I. 5 hours.

Prerequisite: PHY 110 or permission of department.

A development of symbolic-mathematical logic, examining the propositional and predicate calculi with emphasis on problems in translation and formalization and topics in the philosophy of logic and mathematics.

444. Symbolic Logic II. 5 hours.

Prerequisite: PHY (LIN) 442 or 443 or permission of department.

An advanced course dealing with both traditional and modern methods in logic, especially the contributions of symbolic and mathematical logic.

451. Technology and Values. 5 hours.

Prerequisite: At least one course in philosophy.

A study of technology in its broadest human context, with emphasis on the mutual influence between means and ends and the impact of technology on shaping the beliefs and attitudes of a civilization. Includes alternative assessments of technology and illustrates with specific crucial issues of our time.

458. History of Natural Science. 5 hours.

Prerequisite: 10 hours of science or permission of department.

An examination of some major physical, biological, and cosmological theories and their philosophic import, 6th Century B.C. to the present.

459. Philosophy of Natural Science. 5 hours.

Prerequisite: PHY 101 or 110 or permission of department.

The investigation of such topics as the logical structure of scientific hypotheses and/or laws, and the problems of their meaning and confirmation; the general patterns of scientific explanation; and the ideals of prediction and control.

460. Metaphysics. 5 hours.

Prerequisite: At least one course in philosophy.

The problems of metaphysics and their relationship to other areas of philosophy.

461. Epistemology. 5 hours.

Prerequisite: At least one course in philosophy.

The problems of epistemology and their relationship to other areas of philosophy.

471. (SOC) Philosophy of Social Science. 5 hours.

See SOC 471.

474. Philosophy of Mind. 5 hours.

A critical study of the philosophical implications of alternative approaches to psychology such as the behavioral, the psychoanalytic, the phenomenological, with particular attention to such problematic areas as the nature and validation of psychological concepts, law, and theories, and knowledge of other minds.

490. Problems in Philosophy. 5-15 hours.

Prerequisite: PHY 101, 110 and 305 and permission of department.

Investigation of a philosophical problem or group of related problems with emphasis upon extensive reading in primary sources. Selection of topic(s) will vary with instructor and interests of students.

495ABC. Tutorial in Philosophy. 5 credit hours each suffix; maximum credit 15 hours.

Prerequisite: PHY 101 and 110 and 5 additional hours in PHY or a cognate area.

Reading and independent research on a specified topic beyond normal course offerings and closely supervised by the tutor. Application should be made in advance of registration to the Head of the Department. Open only to students prepared to pursue advanced material.

496H, 497H, 498H. Independent Readings and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Religion (REL)

115. Introduction to Western Religious Traditions. 5 hours.

A study of the nature of religion and its function in Western culture. The Judeo-Christian tradition is investigated historically and analytically.

116. Introduction to the Major Religious Perspectives of Mankind. 5 hours.

A comparative and thematic study of the religious experience of the human community as expressed in the various religions or religious perspectives of the world.

225H. Introduction to the Major Religious Perspectives of Mankind (Honors). 5 hours.

Not open to students with credit for REL 116. A comparative and thematic study of the religious experience of the human community as expressed in the various religions or religious perspectives of the world.

315C. (HIS) Religion in the United States. 5 hours.

See HIS 315C.

333. Wisdom Literature of the Old Testament. 3 hours.

Prerequisite: Sophomore standing.

An introduction to the Wisdom literature of the Old Testament, with emphasis upon the book of Job; an examination of the principal ideas of Wisdom material as reflected in present day literature, especially that dealing with the justice of God.

341. History of Christian Theology, Ancient. 5 hours.

A study of the development of Christian thought from the 1st through the 5th Century as expressed in the writings and practices of the Christian community and its leading thinkers.

342. History of Christian Theology, Medieval. 5 hours.

A study of the development of Christian thought from the 6th through the 14th Century as expressed in the writings and practices of the Christian community and its leading thinkers.

343. History of Christian Theology, Modern. 5 hours.

A study of the development of Christian thought from the 15th through the 19th Cen-

tury as expressed in the writings and practices of the Christian community and its leading thinkers.

360. Qumran and the Dead Sea Scrolls. 5 hours.

The content and significance of the Qumran texts (Dead Sea Scrolls) are studied in English translation. Data from archaeology and the Scrolls themselves are used to reconstruct the life and history of the community while various theories regarding the identity of the inhabitants are also considered.

365. Biblical Perspectives on Womanhood. 5 hours.

An examination of Old and New Testament texts dealing with the nature of woman, her relation to man and her position in family, society, and religious institutions. Various historical and contemporary interpretations are considered.

400. The History of Religions. 5 hours.

Prerequisite: Junior standing or permission of department.

A survey of the nature of early primitive religions and the main outlines of the chief living religions of the world. The method will be both historical and analytical.

401. Religion in Asian Cultures. 5 hours.

Prerequisite: Junior standing or permission of department.

The interrelation between religion and culture in contemporary and classical Asia. The course will focus on religion's role historically as a major force in shaping the cultures of South and Southeast Asia, China, and Japan, and on significant contemporary trends reflecting particularly the effects of secularism, war, rising nationalism, Western science, and communism.

404. The Buddhist Tradition. 5 hours.

Prerequisite: Junior standing or permission of department.

The development of Buddhism from its origin in the life and teachings of the Buddha through the period of philosophical ferment in India, and its thought and institutions in the East and the West up to the present.

408. (PHY) Philosophy of Religion. 5 hours.

See PHY 408.

409. Indian Philosophy and Religion. 5 hours.

Prerequisite: Junior standing or permission of department.

Traces the path of India's religious and philosophical thought from the Indus civilization to the present. Attention will be given to interpreting the orthodox Hindu systems as well as

Buddhism and their related religious practices, ethics, castes, and sects.

410. Old Testament Literature. 5 hours.

Prerequisite: Junior standing or permission of department.

A study of the nature, content, and problems of Old Testament literature, with attention given to historical data, literary forms, and outstanding personalities.

411. New Testament Literature. 5 hours.

Prerequisite: Junior standing or permission of department.

A study of the nature, content, and problems of New Testament literature, with particular attention given to the political, social, and religious background of Judaism, out of which Christianity sprang; the life of Jesus; and the immediate foreground of an expanding church.

412. The New Testament World. 5 hours.

Prerequisite: Junior standing or permission of department.

A study of the political, social, and religious influence on the New Testament writings. Special attention is given to intertestamental Judaism and Hellenistic and Roman religion as background to New Testament Christianity.

413ABC. Introduction to the Study of Ancient Religious Texts. 5 hours each; maximum 15 hours.

Prerequisite: 10 hours of advanced work in religion or permission of department. In some cases, reading knowledge of the language required.

A study of the problems related to ancient religious texts. The student will be introduced to the language, manuscript history, and methods of studying ancient religious texts. In some cases, a reading knowledge of the language will be required; in others, English translations will be used.

420. Constructive Theology. 5 hours.

Prerequisite: Junior standing or permission of department.

An examination of the aims, methods, and content of theology as related to the monotheistic religions of mankind.

421. Contemporary Theology. 5 hours.

Prerequisite: Junior standing or permission of department.

An examination of the theories of contemporary theologians concerning such problems as religious language, God, cosmology, human history, revelation, faith and eschatology. Writings from contemporary theologians of the monothestic religions will be investigated.

422. Theology and Culture. 5 hours.

Prerequisite: Junior standing or permission of department.

An examination of the relation of theology to philosophy, science, technology, and the arts, with special attention to the theological attempts to deal with the impact of science and technology upon culture.

425. Issues in Old Testament Theology. 5 hours.

Prerequisite: 10 hours of history and/or literature.

A study of current issues in Old Testament theology. Special attention will be given to the methodologies of important contributors including Walter Eichrodt and Gerhard von Rad.

430. Personalities of the Old Testament. 5 hours.

Prerequisite: Junior standing or permission of department.

A study of the development of Hebrew religion from its early, more primitive stages to the high point attained in the social, ethical, and spiritual teachings of the great writing prophets of Israel.

440. The Teachings of Jesus. 5 hours.

Prerequisite: Junior standing or permission of department.

Although primarily a study of what Jesus taught, attention is given to the literary and environmental background of his teaching, the historical life of the teacher, and the contemporary validity of what he taught.

460. Life and Letters of Paul. 5 hours.

Prerequisite: Junior standing or permission of department.

An historical-exegetical study of the life and letters of Paul, the relation between Acts and the Pauline epistles, early non-Pauline Gentile Christianity, Pauline Theology and its lasting impression on Christianity.

490. Topics and Problems. 5-15 hours.

Prerequisite: Ten hours in religion beyond REL 115.

An investigation of problems and topics in religion with emphasis upon extensive reading in primary sources and individual and/or group research projects. Selection of topics will vary with instructor and interests of students.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Hebrew (HBW)

201. Introduction to Classical Hebrew I. 5 hours.

A study of the elements of classical Hebrew grammar.

202. Introduction to Classical Hebrew II. 5 hours.

Prerequisite: HBW 201.

A continuation of 201.

403. Intermediate Hebrew I. 5 hours.

Prerequisite: HBW 202.

A review of classical Hebrew grammar with reading of selected texts from the Hebrew Bible.

404. Intermediate Hebrew II. 5 hours.

Prerequisite: HBW 403.

Readings of Hebrew texts selected from the Old Testament, Dead Sea Scrolls, or early rabbinic literature.

405. Advanced Hebrew I. 5 hours.

Prerequisite: HBW 404.

Advanced readings in Hebrew literature selected from the poetical sections of the Hebrew Bible, the Hebrew documents from Qumran and the Cairo Geniza, and the Hebrew remains of Ben Sira.

406. Advanced Hebrew II. 5 hours.

Prerequisite: HBW 405.

Advanced readings beyond those of HBW 405 selected from the poetical sections of the Hebrew Bible and from early haggadic and halakic literature.

496H, 497H, 498H. Independent Readings and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Aramaic/Syriac (ARA)

402. Introduction to Aramaic/Syriac. 5 hours.

Prerequisite: HBW 404.

A study of the elements of Aramaic/Syriac, especially as related to Hebrew, along with simple readings from religious texts.

403. Advanced Readings from Religious Aramaic/Syriac Texts. 5 hours.

Prerequisite: ARA 402.

Selected readings from the Bible, the Dead Sea Scrolls, and early rabbinic literature with selections from the ancient Peshitta translation of the Bible and early patristic writings in Syriac.

PHYSICS AND ASTRONOMY

Astronomy (AST)

107-107L. Introduction to Astronomy. 5 hours.

Four hours of lecture and two hours of lab. Students may receive credit *only* for AST 107-107L and 108-108L or AST 291 or AST 297H.

Astronomy from early ideas of the cosmos to modern observational techniques. The solar system: planets, satellites, asteroids, etc., with emphasis on recent space program findings.

108-108L. Introduction to Astronomy. 5 hours.

Four hours of lecture and two hours of lab. Students may receive credit *only* for AST 107-107L and 108-108L or AST 291 or AST 297H.

Prerequisite: AST 107-107L.

The study of the sun and stars, their physical properties and evolution, interstellar material, star clusters, our galaxy and other galaxies, quasars, the universe, its beginning and history.

291. Descriptive Astronomy. 5 hours.

Students may receive credit *only* for AST 107-107L and 108-108L or AST 291 or AST 297H.

A survey of the planetary system followed by a more extensive discussion of stars, nebulae, galactic and stellar structure and evolution, exterior galaxies and cosmology based on modern astrophysical theories and techniques.

295. The Planetary System. 5 hours.

Prerequisite: PCS 101 or AST 107-107L or 291.

A study of the structure of planetary interiors, surfaces and atmospheres and of satellites, comets and interplanetary material. Emphasis is put upon astronomical studies of interest to geologists, geographers, ecologists, biologists and others interested in the origins of the earth, moon, and planetary system.

297H-297L. Astronomy Survey (Honors). 5 hours. Four hours of lecture and two hours of lab.

Students may receive credit *only* for AST 107-107L and 108-108L or AST 291 or AST 297H.

Honors equivalent to AST 291 but with more emphasis placed on the contribution of astronomy to scientific thought, past and present.

392. Introduction to Astrophysics. 5 hours.

Prerequisite: AST 108-108L or 291 and PCS 239-239L.

Spectra of sun, stars, and interstellar matter; absorption and emission coefficients; line formation and curve of growth; spectral classification; mass-luminosity law; radiative transfer; stellar models, evolution, energy sources.

393. Introduction to Astronomical Observations. 5 hours.

Prerequisite: AST 108-108L or 291 or 297H or permission of department.

Introduction to astronomical observations — celestial astronomy including lunar, solar and planetary motions. Lab activities leading to and including use of telescopes to observe physical properties of astronomical objects.

394. Astronomical Techniques. 5 hours.

Prerequisite: AST 393 or permission of department.

Astronomical techniques — photography, photometry, micrometry and spectrography of sun, moon, planets and stars to explore their nature.

396. Topics in Astronomy. 5 hours.

Prerequisite: AST 108-108L or 291 or 297H and PCS 128-128L or 138-138L.

Recent advances in astronomy ranging from the Apollo moon landings and solar system probes near Venus, Mars, Jupiter, and Saturn, to the newest developments in infrared, ultraviolet and radio astronomy. Quasars, pulsars, galactic evolution, cosmological theories and other life in the universe.

466. Astronomical Observations. 3-10 hours.

No more than 5 hours credit per quarter may be earned.

Prerequisite: AST 394.

Observations using modern techniques and equipment to investigate astronomical phenomena.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

591. Astronomy for Teachers. 5 hours.

Not open to students with credit in AST 107-107L, 108-108L, 291 or 297H.

A survey of the planetary system followed by a more extensive discussion of galactic and stellar structure and evolution, exterior galaxies and cosmology based on modern astrophysical theories and techniques.

Physics (PCS)

101. Physical Science. 5 hours.

A survey to give an elementary knowledge of fundamental laws and concepts in physics and astronomy and to give an understanding of how the scientific method as exemplified by physical science has contributed to man's thinking. No credit will be allowed to students with prior credit in any physics course.

127-127L. Introductory Physics — Mechanics and Wave Motion. 5 hours. Four hours of recitation and two hours of lab.

Prerequisite: MAT 109 or 116.

An introductory course that deals with the fundamental laws of mechanics and wave motion.

128-128L. Introductory Physics — Thermodynamics, Electricity and Magnetism. 5 hours. Four hours of recitation and two hours of lab.

Prerequisite: PCS 127-127L.

An introductory course that deals with the fundamental laws of thermodynamics, electricity and magnetism.

137-137L. Introductory Physics for Science and Engineering Students — Mechanics. 5 hours. Four hours of recitation and three hours of lab.

No credit will be allowed for PCS 137-137L if credit is shown for PCS 127-127L.

Prerequisite: MAT 253.

Corequisite: MAT 254.

Fundamental laws of mechanics.

138-138L. Introductory Physics for Science and Engineering Students — Thermodynamics, Electricity and Magnetism. 5 hours. Four hours of recitation and three hours of lab.

No credit will be allowed for PCS 138-138L if credit is shown for PCS 128-128L.

Prerequisite: PCS 137-137L.

Fundamental laws of thermodynamics, electricity and magnetism.

Prerequisite: PCS 137-137L.

Fundamental laws of thermodynamics, electricity and magnetism.

229-229L. Introductory Physics — Optics and Modern Physics. 5 hours. Four hours of recitation and two hours of lab.

Prerequisite: PCS 128-128L.

An introductory course in optics and modern physics.

239-239L. Introductory Physics for Science and Engineering Students — Light and Modern Physics. 5 hours. Four hours of recitation and three hours of lab.

No credit will be allowed for PCS 239-239L if credit is shown for PCS 229-229L.

Prerequisite: PCS 138-138L.

Wave motion, light, and quantum physics. Atomic, molecular, and nuclear properties.

332-332L. Introductory Electronics. 5 hours. Three hours of recitation and six hours of lab. Prerequisite: PCS 229-229L or 239-239L and MAT 255.

Electrical circuits and solid state electronics. Topics include: DC and AC circuit analysis, diode and transistor circuits, integrated circuits and digital electronics.

333-333L. Modern Optics. 5 hours. Four hours of recitation and three hours of lab.

Prerequisite: PCS 229-229L or 239-239L and MAT 255.

Study of the properties of light with emphasis on physical optics: diffraction, polarization, lasers, holography.

400. Physics Seminar. 1 hour.

Discussion of contemporary topics in physics.

404. Theoretical Mechanics. 4 hours.

Prerequisite: PCS 239-239L or 229-229L and MAT 358.

Statics, kinematics, and dynamics of a particle and of systems of particles.

420. Electricity and Magnetism. 4 hours.

Prerequisite: PCS 239-239L or 229-229L and MAT 459 or PCS 404.

Experimental foundations; development of Maxwell's equations.

430. Thermodynamics and Kinetic Theory. 4 hours.

Prerequisite: PCS 239-239L or 229-229L and MAT 358.

The laws of thermodynamics and their application to physical systems. Kinetic theory.

440. Classical Theoretical Physics. 4 hours.

Prerequisite: PCS 404 and 420.

Methods of problem solving and formal developments in mechanics including the formulations of Lagrange and Hamilton. Applications of Maxwell's equations.

450. Atomic Physics and Quantum Mechanics I. 4 hours.

Prerequisite: PCS 404 and 420.

Development of wave mechanics with applications to atomic structure.

451. Atomic Physics and Quantum Mechanics II. 4 hours.

Prerequisite: PCS 450.

Development of wave mechanics with applications to atomic and molecular structure.

465. Experimental Physics. 3-10 hours.

Prerequisite: PCS 332-332L.

Lab course in which the student uses modern experimental techniques to investigate phenomena in atomic, molecular, nuclear, and solid state physics.

472. Nuclear Structure. 4 hours.

Prerequisite: PCS 450.

Introduction to the theory of nuclear structure as it has been inferred from quantum mechanical considerations and the study of experimental data on radioactivity and nuclear reactions.

482. Condensed Matter Physics. 4 hours.

Prerequisite: PCS 430 and 450.

Elastic, thermal, electrical, magnetic and optical properties of condensed matter. Covers such topics as: crystal structure, symmetry operators, X-ray and neutron diffraction, lattice vibrations, thermal properties, electrons in metals and semiconductors, dielectric and optical properties, magnetism and magnetic resonance, superconductivity and quantum fluids.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

527-527L. Introductory Physics for Teachers — Mechanics and Wave Motion. 5 hours.

Four hours of recitation and two hours of lab. Prerequisite: MAT 109 or 116.

Credit is limited to students working for a degree in education. This course is designed to aid the introductory physics teacher in dealing with problems in mechanics and wave motion which may arise in his/her teaching. The effective presentation of physical concepts in this area will be emphasized.

POLITICAL SCIENCE (POL)

Requirements for Major: Political Science majors take a minimum of 40 quarter hours or eight courses in Political Science beyond POL 101 or 105H (American Government), including 10 hours in Theory and Method, 10 hours in American Studies, 10 hours in Global Studies, and 10 hours in special courses or additional courses elected from the three broad areas mentioned above. Majors may count only 10 hours of coursework at the 200 level toward the 40 hour minimum requirement for the Political Science major.

Majors and non-majors are generally encouraged to take either the 200 level course in an area or the 300 level course in a particular field before taking 400 level courses in the area or field.* The courses listed are grouped by area. The courses in a given field may be identified by the second digit in 300 or 400 numbered courses: (0) Political Theory; (1) American National Government; (2) International Relations; (3) Comparative Politics; (4) Public Administration; (5) Public Policy; (6) State and City Government; (7) Political Science Methods; and (8) Public Law and Criminal Justice. For example, a student who wanted to take POL 443, Public Finance Administration, should probably first take 340, Introduction to Public Administration.

101. American Government. 5 hours.

An introductory course covering the essential facts of federal, state, and local governments in the United States. Prerequisite for advanced courses in political science. Also see pages on Examinations on the Constitutions in the Academic Program section.

105H. American Government (Honors). 5 hours.

Not open to students with credit in POL 101. An introductory course which emphasizes United States government and politics and introduces the student to source materials of American political theory and American political institutions. Also see pages on Examinations on the Constitutions in the Academic Program section.

*Since most students take POL 101 or its equivalent in order to satisfy the U.S. Constitution and Georgia Constitution requirements, there is no 200 level introduction to American studies. Moreover, some fields do not have a 300 level introductory course, i.e., American National Government, Public Policy, and Political Science Methods. POL 320, Contemporary Global issues, serves as an entrance course for both International Relations and Comparative Politics.

Theory and Method

202. Introduction to Political Science. 5 hours.

Prerequisite: POL 101 or equivalent.

Strongly recommended for those who are considering a major in political science. It approaches the study of politics from the standpoint of selected policy issues from the areas of national security, economic welfare and social justice. It raises fundamental questions of how these public policies are formed and what difference they make for individuals in society. It also emphasizes basic skills of writing and analysis which will be important in subsequent coursework in political science and the other social sciences.

212H. Introduction to Political Science (Honors). 5 hours.

Not open to students with credit for POL 202.

Prerequisite: POL 101 or equivalent.

Follows the outline of POL 202.

300. American Political Thought. 5 hours.

Prerequisite: POL 101 or equivalent.

An introduction to the ideas about human nature and government that have shaped political practice and debate in America. Attention will be given to the principles of the Declaration of Independence and the Constitution, as developed by Jefferson, Madison, and Hamilton, and to interpretation of these principles by such statesmen as Lincoln and Wilson. Other topics include black political thought and current liberal-conservative debate.

300H. Social and Political Theory (Honors). 5 hours.

A study of some major theories concerning man's political, economic, educational, and religious institutions, emphasizing a cross social science disciplinary approach.

301H. Issues in Political Philosophy (Honors). 5 hours.

A study of basic questions in political philosophy: e.g., purposes of government, forms of government, relationships of government and individual, and the limits of political authority.

370. (PSY/SOC) Scientific Analysis in Criminal Justice. 5 hours.

Prerequisite: POL 204.

Designed to develop students' ability to evaluate arguments and to think clearly, critically, and logically about issues related to crime and criminal justice. Student attention is directed to approaches and analytical techniques that are pertinent to research, program evaluation, and policy analysis in the same area.

401. Political Philosophy: Plato to Machiavelli. 5 hours.

Prerequisite: POL 101 or equivalent.

Analysis of selected works of such writers as Plato, Aristotle, Cicero, St. Augustine, and St. Thomas, concluding with the rejection of classical thought by Machiavelli.

402. Political Philosophy: Hobbes to Nietzsche. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the development of modern political philosophy through the analysis of selected works of such writers as Hobbes, Locke, Hume, Rousseau, Mill, Marx, and Nietzsche.

403. Contemporary Political Thought. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of major issues in 20th Century political thought. Attention will be given also to the theoretical roots of major contemporary ideologies.

406. Theory of Political Organization. 5 hours.

Prerequisite: POL 101 or equivalent.

An examination of how different political arrangements affect both the results of political processes and the opportunities for political participation. Consideration will be given to systems, institutional, cultural, group and elite approaches.

407. Theories of Political Choice. 5 hours.

Prerequisite: POL 101 or equivalent.

Analysis and evaluation of methods for individual choice in the face of political alternatives. Emphasis will be given to the role of individual decision-making in orienting political behavior and determining how and when political actors come into conflict or behave cooperatively.

408. Problems in Democratic Theory. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of major problems that arise in theoretical discussions of democracy such as the nature of democratic government, its purposes, its justification, its limitations and the conditions necessary for its maintenance. Also see pages on Examinations on the Constitutions in the Academic Program section.

470A. Research Methods in Political Science. 5 hours.

Prerequisite: POL 101 or equivalent.

Introduction to research design and methods of data collection; attention given to philosophical foundations of modern political science. Recommended for majors, especially those looking forward to graduate school.

470B. Research Methods in Political Science. 5 hours.

Prerequisite: POL 470A.

Introduction to the qualitative and quantitative techniques for measurement, analysis, and inference of political data. Recommended for majors, especially those looking forward to graduate school.

American Studies

204. Introduction to Criminal Justice Administration. 5 hours.

Prerequisite: POL 101 or equivalent.

An analysis of the actors and agencies in the administration of criminal law. The survey includes the political and legal ramifications of processes critical in the application of the criminal sanction: arrest, bail, prosecution, conviction, sentencing, and corrections.

310. Southern Politics. 5 hours.

Prerequisite: POL 101.

The politics of the region as they impact the nation. Also see pages on Examinations on the Constitutions in the Academic Program section.

340. Introduction to Public Administration. 5 hours.

Prerequisite: POL 101 or equivalent.

Introduction to major issues of administration and public agencies, such as personnel, finance, administrative law, and the growth and significance of administrative legislation and adjudication.

360. Introduction to State-City Government. 5 hours.

Prerequisite: POL 101 or equivalent.

Introduces state and city government. Provides non-majors with broad perspectives on institutions of governor-mayor, legislatures-commissions; and identifies functions and structures of states, counties and cities. Recommended for political science majors as introduction to upper division courses in state and urban politics.

380. Introduction to the Legal Process. 5 hours.

Prerequisite: POL 101 or equivalent.

An examination of the nature of law, legal reasoning and the structure and function of legal institutions and the legal profession. Open to all undergraduates and recommended for those considering law as a career.

410. American Political Parties. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of organized groups whose purpose is to influence or control government in the U.S. Particular emphasis will be placed on the

structure and activities of the two major political parties. The future of the American Party system will be considered.

411. Electoral Behavior. 5 hours.

Prerequisite: POL 101 or equivalent.

An examination of the factors which contribute to electoral choice and the dynamics of voting in the American political system.

413. Government and Interest Groups. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the major organized agrarian, labor, business, professional, and other special interest groups that regularly participate in the formation of public policy.

414. The Legislative Process. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the U.S. Congress with emphasis on recruitment and composition of leadership, procedures, and the role of parties and interest groups. Recent changes in the Congress will be examined in light of theories of representation.

415. The U.S. Presidency. 5 hours.

Prerequisite: POL 101 or equivalent.

An historical examination of the President of the United States. The President's constitutional position will be addressed, including theories of executive dominance and executive privilege. Attention will also be given to the President's attempts to control the executive branch, and presidential-congressional relations.

416. Political Socialization. 5 hours.

Prerequisite: POL 101 or equivalent.

An examination of the theories and concepts associated with attitude and opinion formulation and socialization in both mass and elite publics.

442. Public Personnel Administration. 5 hours.

Prerequisite: POL 101 or equivalent.

Procedures and problems of governmental personnel administration. Human relations aspects. Studies of governmental agencies are employed to give the students firsthand knowledge of governmental personnel administration.

443. Public Finance Administration. 5 hours.

Prerequisite: POL 101 or equivalent.

Activities involved in the collection, custody and expenditure of public revenue, such as the assessment and collection of taxes, public borrowing and debt administration, the preparation and enactment of the budget, financial accountability and the audit.

445. Comparative Administration. 5 hours.

Prerequisite: POL 101 or permission of department.

A study, using the comparative approach, of the existing administrative structures, institutions, and procedures of selected national states. Areas of emphasis will include the ecology of administration in both highly developed and underdeveloped states.

446. Government Organization and Administrative Theory. 5 hours.

Prerequisite: POL 101 or equivalent.

A systematic analysis of theories of organization, management and administration. Special consideration will be given to institutional, behavioral and psychological factors.

448. Criminal Justice Policy Analysis. 5 hours.

An analysis of the organization structure of police agencies and criminal courts, with emphasis on methods for improving the efficiency and effectiveness of these agencies.

451A. Policy Analysis (Human Resources). 5 hours.

Prerequisite: POL 101 or equivalent.

An analysis of major public policies and their impact on the political system and its environment. This course deals with policies involving human resources, such as civil rights and social services.

451B. Policy Analysis (Physical Resources). 5 hours.

Prerequisite: POL 101 or equivalent.

An analysis of major public policies and their impact on the political system and its environment. This course considers policies involving physical resources, such as energy, the environment, and technology.

462. Urban Administration and Policy. 5 hours.

Prerequisite: POL 101 or equivalent.

General analysis of principles and issues of administering city governments in U.S. and selected foreign countries. Problems of local governmental managing, budgeting, planning and delivering urban services will be emphasized.

463. Urban Political Behavior. 5 hours.

Prerequisite: POL 101 or equivalent.

A comparative study of political behavior within urban and metropolitan areas. This course will examine voting and interest group behavior among urban residents. Specific attention is paid to the relationship between citizen participation and public policy outcomes in urban governments.

465. State Government. 5 hours.

Prerequisite: POL 101 or equivalent.

The politics of policy-making at the state level. An emphasis is placed on a comparative policy perspective with regionalism serving as a central focus for study. Various models and theories of state policy-making will be examined. Also see pages on Examinations on the Constitutions in the Academic Program section.

468. Federalism. 5 hours.

Prerequisite: POL 101 or equivalent.

An analysis of intergovernmental relations within the U.S. and other federal systems. Attention is paid to issues of intergovernmental fiscal policy, administration, and organizational theories.

480. The Constitution of Georgia. 5 hours.

Prerequisite: POL 101 or equivalent.

An historical survey of the evolution of the Constitution of Georgia followed by a detailed study of the present Constitution through decisions and opinions of the Supreme Court of Georgia. Also see pages on Examinations on the Constitutions in the Academic Program section.

482. American Constitutional Law I. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the origins of American constitutionalism and judicial review and the structure and practices of courts in interpreting the Constitution. Written paper and briefs.

483. American Constitutional Law II. 5 hours.

Prerequisite: POL 101 or equivalent.

The substantive constitutional law of the separation of powers, national and state regulatory powers, and the federal system; and the role of courts in public policy-making in these areas. Written paper and/or case briefs. Also see pages on Examinations on the Constitutions in the Academic Program section.

484. American Constitutional Law III. 5 hours.

Prerequisite: POL 101 or equivalent.

The substantive constitutional law of individual and minority group rights and liberties, and fair trial rights; and the role of the courts in public policy-making in these areas. Written paper and/or case briefs. Also see pages on Examinations on the Constitutions in the Academic Program section.

487. Criminal Law and Procedure. 5 hours.

Prerequisite: POL 204.

An introduction to the substantive law of major crimes against person and property and to the procedures governing arrest, trial, and administration of criminal sanctions.

488. Judicial Behavior and Modern Jurisprudence. 5 hours.

Theoretical and empirical approaches to the study of the U.S. court systems as a part of the total political system.

489. Administrative Law. 5 hours.

Prerequisite: POL 101 or equivalent.

The legal principles and practical doctrines involved in the work of administrative agencies vested with quasi-legislative or quasi-judicial powers.

Global Studies

203. Introduction to Global Studies. 5 hours.

Prerequisite: POL 101 or equivalent.

Introduction to practices and problems of international politics in global context, e.g., power, ideology, diplomacy, war, international organization and law, international economics, and the nature of independence in an interdependent world. Students apply concepts and principles in simulation of a contemporary global problem.

213H. Introduction to Global Studies (Honors). 5 hours.

Not open to students with credit for POL 203.

Prerequisite: POL 101 or equivalent.

This course follows the outline of POL 203.

320. Contemporary Global Issues. 5 hours.

Prerequisite: POL 101 or equivalent.

Designed to introduce majors and non-majors to selected issues from the areas of national security, economic welfare, and social justice as well as to various policy responses in the global community. Emphasis on using international sources and writing a research paper.

332H. Life Under Communism (Honors). 5 hours.

Prerequisite: POL 101 or equivalent.

Utilizing a multi-disciplinary perspective, this course assesses the impact of communism on the people by examining the goals of communist leaders, the policies they have adopted to attain them, and what this has meant to the people.

421. International Organization. 5 hours.

Prerequisite: POL 101 or equivalent.

The origins and evolution of international organizations, with emphasis on the United Nations and the specialized agencies. Factors favoring and impeding their development. Their effect on political, economic, and social issues. Research using U.N. publications.

422. International Law. 5 hours.

Prerequisite: POL 101 or equivalent.

Readings, cases, lectures and research on the

functioning of the legal structures in the international system with special emphasis on the relation between law and politics.

425. American Foreign Policy. 5 hours.

Prerequisite: POL 101 or equivalent.

An analysis of domestic and international sources and consequences of American foreign policy. Emphasis on the role of American institutions and processes in making policy on national security and interdependence issues. Paper is usually required.

426. International Conflict. 5 hours.

Prerequisite: POL 101 or equivalent.

Causes, consequences, and management of violence between countries. Analysis of principal theoretical viewpoints, e.g., human aggressiveness, elite aims and ambitions, misperceptions and accidents, imperialism, socioeconomic gaps, and systemic failure.

429. United Nations Practicum. 5 hours; repeatable with maximum of 10 hours.

Prerequisite: POL 421 or previous participation in Model United Nations.

An analysis of issues coming before The United Nations Organization in the upcoming session from the standpoint of assigned countries, culminating in participation in The National Model United Nations in New York in early Spring. Research papers and practicum at United Nations Headquarters in New York.

431. Political Development. 5 hours.

Prerequisite: POL 101 or equivalent.

A comprehensive overview of the socio-political dynamics in the process of institutional development, industrialization, and modernization. An examination of explanatory and predictive factors affecting the quality of life in changing societies.

432. Communist Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.

A comparative study of three contemporary Communist Party states: the Soviet Union, China, and Yugoslavia. The course examines similarities and differences with particular emphasis on domestic policy.

433. European Communism. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the contemporary domestic and foreign policies of the Communist states of Europe and the Soviet Union. Students will experience policy planning and decision-making through their involvement in the Communist State Simulation.

434. Latin American Political Systems. 5 hours.

A comparative analysis of the political systems of Central and South America with emphasis

on the concepts of political stability, conflict, revolution, economic development and modernization.

435. Western European Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.

Politics and process in Western European political systems. Emphasis will be focused on comparative analysis with examples drawn from the full range of European parliamentary democracies.

438. African Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the social structure, political culture and political dynamics of Sub-Saharan African systems with emphasis on West Africa.

439. Far Eastern Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.

An interdisciplinary analysis of social, cultural, and political processes in three profoundly contrasting Far Eastern nations including China, Japan, and Korea. Both domestic and international issues will be examined.

Special Courses

350. Government Internship. 5-10 hours.

Prerequisite: POL 101 or equivalent.

Specifically designed for the academic portion of government internship programs. It will variously consist of seminars, assigned readings, and research assignments, and will supplement the practical experience gained by interns in the performance of their duties in government agencies. Students are sometimes required to have taken an advanced course in the area of their internship. Information on various government internships is available in the Department of Political Science.

496. Independent Reading or Projects. 5-10 hours.

Prerequisite: POL 101 or equivalent and 15 additional hours of political science.

Affords superior students who are not in the honors program the opportunity to engage in individual study, reading or projects, under the direction of a project director.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

Prerequisite: POL 101 or equivalent.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

Prerequisite: POL 101 or equivalent.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

550ABC. (PSY/SOC) Internship in Criminal Justice. 5 hours each; maximum 15 hours.

Prerequisite: POL 204, senior division status, and approval of Criminal Justice Program Director.

An internship specifically designed for students pursuing a degree in criminal justice. Interns will be assigned specific work assignments in a criminal justice agency or, where appropriate, more than one agency. The academic portion of the internship will be supervised by a member of the University of Georgia faculty and may include seminars, assigned readings, and research assignments. A paper or other written assignments will be required. The completion of 15 hours satisfies the internship requirement for the A.B. degree in criminal justice.

PSYCHOLOGY (PSY)

PSY 101 is a prerequisite to all other courses in psychology, except PSY 103H and 258. The major includes PSY 322, and 5 hours from PSY 332, 334, 336, 414, and 415, and 5 hours from 455, 456, 457 and 481, and 25 hours of approved electives.

101. Elementary Psychology. 5 hours.

The introductory psychology course, designed to acquaint the student with the empirical phenomena, laws, theories, and history of psychology. The student reviews the data and hypotheses derived from studies of animal and human learning, motivation, perception, differential, and social behavior. Particular attention is paid to the biological correlates of behavior. The emphasis is upon the fundamental principles of psychology rather than upon the application of these principles. Supplemental readings will be assigned in some portions of the course. Students will also be given the opportunity to participate in research.

103H. General Psychology (Honors). 5 hours.

Not open to students with credit for PSY 101. A survey of general psychology, with emphasis on theoretical issues in current psychology and on methodological problems encountered in the area.

251. Brain and Behavior. 5 hours.

A survey of the relationship of the brain to various behavioral systems. The link between

neural functioning and behaviors such as emotion, motivation, memory, perception, and intelligence will be explored.

252. Comparative Animal Behavior. 5 hours.

Introduction to the study of comparative psychology. The course provides a survey of the methods, principles, and findings that have emerged from the study of animal behavior.

253. Mental Processes. 5 hours.

An introduction to the study of mental processes involved in human behavior: perception, imagery, memory, attention, problem-solving, decision-making, and thinking.

254. Basic Learning and Motivation. 5 hours.

An introduction to the study of learning. Basic processes such as acquisition, generalization, extinction, reinforcement and punishment are discussed. The application of these processes to problems of behavior modification as encountered in clinics and educational settings will be covered.

255. Great Issues in Psychology. 5 hours.

A study of some of the persisting great issues in the development of modern psychology. For example, can the mind be studied scientifically; are there human instincts; what is the nature of mental illness; what is the relationship between Gestalt, psychoanalytic, and behavioristic philosophies of psychology.

256. (SOC) Interpersonal Behavior. 5 hours.

A survey of the social behavior of adults from a psychological perspective. Topics such as interpersonal aggression, group dynamics, interpersonal attraction, leadership, conformity, and persuasion are examined.

257. Applications of Psychology. 5 hours.

A survey of the applications of psychology to human behavior. Attention is given to the broad scope of the uses of psychology in understanding, measuring, changing and improving human behavior. The course will serve as an introduction to such topics as personality, abnormal behavior, clinical psychology, and human relations.

258. The Psychology of Adjustment. 5 hours.

A course in mental hygiene, dealing with the appropriate and inappropriate reactions to frustration and stress; solutions of conflicts, fears, and anxiety; building emotional stability and preventing mental illness.

259. Social and Personality Development. 5 hours.

A survey of the factors that influence children's social behavior as they are integrated into adult society. Included are discussions of the basic theories and research pertaining to

the development of sex roles, aggression, altruism, moral standards, dependency, independence, achievement, and peer relations.

371. Applied Psychology of Self-Management and Actualization. 5 hours.

An analysis, comparison and integration of the psychological principles and procedures involved in behavioral self-management and the self-actualization of human potentials. Practical applications of these procedures in personal development projects and a survey of their uses in social, professional and organizational contexts.

401. Advanced General Psychology. 5 hours.

Prerequisite: At least two of the following courses: PSY 322, 332, 334, 336.

Review, summary, and integration of psychology as a whole, including psychology as a scientific endeavor, biological and developmental processes, perception, learning, remembering, thinking, motivation and emotion, personality and individuality, conflict and adjustment, mental health, social behavior and the practice and profession of psychology as a science.

425ABC. Seminar in Psychology. 5 hours each.

Prerequisite: 20 hours of advanced psychology and permission of department.

A seminar to permit faculty and undergraduate students to explore, in depth, current topics and new developments in areas of psychology which are not treated extensively in regular courses.

550ABC. (POL/SOC) Internship in Criminal Justice. 5 hours each; maximum 15 hours.

See POL 550ABC.

General Experimental Psychology

300. Special Problems. 2-15 hours (maximum of 5 hours per quarter).

Prerequisite: 20 hours in psychology.

A course designed for the advanced undergraduate student who wishes to conduct independent study and research.

322. Experimental Psychology. 5 hours.

Introduction to the experimental and quantitative methods used by psychologists to generate new psychological knowledge, and to determine the generality, validity, and reliability of research data. Laboratories will offer demonstrations as well as direct experience with research methods and techniques, and with methods for the analysis and description of research results.

332. Behavior Analysis and Theory. 5 hours.

Prerequisite: PSY 322.

Introduction to empirical studies in the areas of learning, perception, and motivation. Lab work will offer direct experience with basic concepts and methods of these areas.

370. (POL/SOC) Scientific Analysis in Criminal Justice. 5 hours.

See POL 370.

404. History of Psychology. 5 hours.

A study of the history of psychology and its antecedents, of systematic developments and the types of research these systems have produced.

455. Psychology of Learning. 5 hours.

An empirical and theoretical study of classical and instrumental conditioning, discrimination learning, the acquisition of complex skills, and response elimination.

456. (BIO) Sensory System. 5 hours.

Prerequisite: PSY 322 or BIO 380 or equivalent.

This course covers the sensory systems: vision, audition, touch and pain, taste, smell, the vestibular sense (balance), and lesser known animal senses such as sensitivity to magnetic and electrical fields. Five aspects of these systems are discussed: the physical stimulus, anatomy, neurophysiology, behavioral physiology/psychophysics, and clinical problems.

457. Psychology of Perception. 5 hours.

The phenomena of perception are investigated. Empirical and experimental demonstrations are conducted, followed by a study of the various theories of perception.

475. (ANT) Principles of Primate Phylogeny. 5 hours.

See ANT 475.

476. (ANT) Comparative Physical and Psychological Development of the Primates. 5 hours.

See ANT 476.

477. (ANT) Organization of Primate Social Groups. 5 hours.

See ANT 477.

480. Physiological Psychology. 5 hours.

Prerequisite: 10 hours of biology.

The relationship between the internal environment and such behaviors as food intake control, mating behavior, neural action, emotion, etc. are studied.

481. Comparative Psychology. 5 hours.

Prerequisite: 10 hours of biology.

An analysis of the structure and behavior of

the amoeba and the animal series to man. The integration of structure, psychological processes and behavior are emphasized throughout the course, resulting in a more thorough understanding of the adjustment processes.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Psychometrics and Personnel Psychology

336. Introduction to Measurement and Differences. 5 hours.

Introduction to empirical studies of individual and group differences in cognitive and non-cognitive traits. Lab work will offer direct experience with basic concepts, methods and implications in these areas.

414. Introduction to Industrial-Organizational Psychology. 5 hours.

A survey of major topics in industrial-organizational psychology, with particular emphasis on organizational psychology and personnel psychology, as applied to the fields of business, industry, and government.

415. Psychometrics. 5 hours.

This course focuses on the theoretical and statistical principles that underlie psychological measurement. Emphasis is placed on understanding how these principles are employed in the development and use of psychological tests. Applications of existing tests are discussed and critiqued. Professional standards and legal guidelines are presented.

561. (MKT) Behavioral Theory and Marketing. 5 hours.

See MKT 561.

582. (MAN) Personnel Program Development. 5 hours.

See MAN 582.

586. (MAN) Compensation Administration. 5 hours.

See MAN 586.

588. (MAN) Personnel Selection and Placement. 5 hours.

See MAN 588.

Personal and Social Development

310. Psychology of Women. 5 hours.

Prerequisite: PSY 101 or 258.

This course is focused on women as the subject of psychological inquiry. Topics covered include theories of personality, psychopathology of women, psychological aspects of reproductive health, psychological reactions of women to being victimized, and life crises of women.

326. Psychology of Sex and Sexual Deviations. 5 hours.

Prerequisite: PSY 101 or upper division standing.

A survey of the psychological perspectives and study of human sexual behavior. Emphasis is given to empirical findings and current personal and social implications. Topics include the study of variations in sexual behavior, deviance, social patterns, assessment, treatment and trends.

334. Social and Personal Behavior. 5 hours.

Prerequisite: PSY 322.

Introduction to empirical studies in the areas of personality and development, and social behavior. Lab work will offer direct experience with basic concepts and methods in these areas.

373. (SOC) Social Psychology. 5 hours.

An upper-level, in-depth analysis of the social bases of behavior including the origins and development of social competence, the interaction of individuals with groups, social motivation, suggestion, and attitudes. Methods of research in social psychology with an emphasis on the use of experimental techniques and exposure to research literature.

374. Developmental Psychology. 5 hours.

A survey of the procedures and research on the physical and psychological development of the maturing human.

383H. (SOC) Social Psychology (Honors Colloquium). 5 hours.

See SOC 383H.

395. (CFD) Introduction to Child Development. 5 hours.

See CFD 395.

406. Psychology of Aging. 5 hours.

Prerequisite: PSY 374 and SOC 365.

A survey of age-related changes in behavior with an emphasis on the life span aspects of psychology and gerontology. Discussions will cover empirical and theoretical research on learning, personality, attitudes, sensation, perception, aptitudes, ability, and potential with particular reference to behavioral

changes in the latter portion of the life span. Research related to adjustment problems among the aged will be reviewed.

407. Humanistic Psychology. 5 hours.

Prerequisite: Two upper division psychology courses or equivalent.

As the "third force" in psychology, humanistic psychology includes the study of self-theory, being-psychology, and contributions of the humanities to psychology.

408. (CFD) Development of the Young Child. 5 hours.

See CFD 408.

423. Abnormal Psychology. 5 hours.

The study of the various forms of mental illness and maladjustment, including mental deficiency and anti-social behavior.

450. (SPA/LIN) Language Development. 5 hours.

See SPA 450.

451. Theories of Personality. 5 hours.

The primary emphasis of this course is on the survey of major personality theorists. Additionally some attention is devoted to current research in personality and to methodological issues in the field.

454. Psychology of Values. 5 hours.

A significant contemporary problem is the search for meaningful values in this age of crisis. Value conflicts are increasingly evident on personal, group, national and international levels. This course will examine the contributions of psychology to the resolutions of these problems, in terms of value measurement and theoretical implications of research findings. Both behavioral and humanistic perspectives will be studied. The course is open to non-psychology majors.

466. (SPC) Psychology of Speech Communication. 5 hours.

See SPC 466.

ROMANCE LANGUAGES

A student continuing a language taken in high school must take either the language achievement test of the College Entrance Examination Board or the placement test administered by The University of Georgia Testing and Evaluation Center. Students will be placed in the appropriate course on the basis of their scores and other pertinent information.

No student may receive credit for any course which is a prerequisite to a course for which he/she has already received college

credit. Exception may be made only by the head of the department.

Majors: A major in French or Spanish ordinarily consists of 40 quarter-hours of coursework above the 100 level including the following: French or Spanish 210 and 211; French or Spanish 310 plus at least one of French or Spanish 311, 312, 313; and four courses in advanced French or Spanish literature, language and civilization at the 300 or 400 level.

A major in Romance Languages (French, Italian, Spanish) consists of 30 hours in the major language and 20 hours in the minor language. This shall include a minimum of 25 hours in the first language at the 300 level and above, and a minimum of 15 hours in the other language at the 300 level and above. A minimum grade of C is required in all of these courses.

Graduate School Reading Knowledge Requirement:

A grade of B or better in French or Spanish 350 will satisfy the reading knowledge requirement of the Graduate School. Italian or Portuguese 360 may also be accepted by some departments to satisfy this requirement.

Undergraduate Literature Requirement:

Students may take any of the following courses to satisfy the literature requirement: FR 211, 216H, 310, 311, 312, 322H; ITA 310, 311; SP 211, 216H, 310, 311, 312, 313, 321H.

Catalan (CAT)

401. Catalan Language and Literature. 5 hours.

Prerequisite: At least four terms of another Romance language or Latin, or by permission of department.

This course will teach a reading knowledge and basic conversational knowledge of Catalan, the essential grammatical structures, the main lines of literary history, and the importance of Catalan nationalism in the Spanish context.

French (FR)

101. Elementary French. 5 hours.

Only for students with no previous knowledge of French.

Teaches conversation, grammar, fundamentals of pronunciation and reading. Students in this course are required to spend a minimum of one hour a week outside of class in the language lab.

101A. Elementary French. 5 hours.

An introductory course for students who present college entrance units in high school French but whose placement score is below that required for FR 102.

102. Elementary French. 5 hours.

Prerequisite: FR 101, 101A, or one entrance unit in French.

A continuation of FR 101 or 101A.

103. Beginning French. 5 hours.

Prerequisite: FR 102 or two entrance units in French.

A continuation of FR 102.

104. Intermediate French. 5 hours.

Prerequisite: FR 103 or equivalent.

Extensive reading of texts of literary merit. Grammar review, conversation, and pronunciation. Also prepares students to enter courses in French literature (211) or French composition and conversation (210, 355).

104A. Intermediate French. 5 hours.

Prerequisite: FR 103 or equivalent.

Readings and discussions on French culture, civilization, and current events. Fourth-quarter language review, with emphasis on oral practice and reading comprehension. Also prepares students to enter courses in French literature (211) and French composition and conversation (210, 355).

104B. Intermediate French. 5 hours.

Prerequisite: FR 103 or equivalent.

General readings and discussions on French commerce and economics with emphasis on basic commercial and corporate vocabulary, letter writing, and French and English equivalencies in commercial systems. Fourth-quarter language review. Also prepares students to enter courses in French literature (211) and French composition and conversation (211, 355).

104C. Intermediate French. 5 hours.

Prerequisite: FR 103 or equivalent.

Readings and discussions in the sciences and humanities, including fields such as science, history, architecture, and international politics. Fourth-quarter language review, with emphasis on comprehension of readings and translation. Also qualifies students to enter courses in French literature (211) and French composition and conversation (210, 355).

113H. Accelerated Intermediate French I (Honors). 5 hours.

Not open to students with credit for FR 102 or 103.

Prerequisite: FR 101, 101A or equivalent. (Advanced Placement test scores may be consid-

ered as the equivalent.)

Primarily an intensive grammar course covering material studied in FR 102 and 103. Honors students who do satisfactory work in this course may substitute it for FR 102 and 103.

114H. Accelerated Intermediate French II (Honors). 5 hours.

Prerequisite: FR 113H or equivalent.

Not open to students with credit for FR 104, 104A, 104B, or 104C.

Emphasis on advanced readings and grammar review.

210. French Conversation and Composition. 5 hours.

Prerequisite: FR 104 or 104A or 104B or 104C or 114H.

The emphasis is divided between conversation and composition. The two phases of the course are correlated to promote the student's ability to express himself/herself accurately whether in speaking or in writing French. Given in French.

211. Critical Reading of French Literature. 5 hours.

Prerequisite: FR 104 or 104A or 104B or 104C or 114H.

An introduction to the critical reading and interpretation of French literature through the study of representative masterpieces in various genres. The student will be presented with the basic vocabulary and techniques of literary analysis and criticism. Given in French.

215H. French Conversation and Composition (Honors). 5 hours.

Not open to students with credit for FR 210.

Prerequisite: FR 114H or 104, 104A, 104B, 104C with Honors standing.

See FR 210. May be substituted by French majors/minors for FR 210. Given in French.

216H. Critical Reading of French Literature (Honors). 5 hours.

Not open to students with credit for FR 211.

Prerequisite: FR 114H or 104, 104A, 104B, 104C with Honors standing.

See FR 211. May be substituted by French majors/minors for FR 211. Given in French.

FR 210 (or 215H) is prerequisite to all advanced French language and civilization courses.

FR 211 (or 216H) is prerequisite to all advanced French literature courses.

306. French Conversation and Composition. 5 hours.

Designed to provide additional practice in French conversation and composition beyond FR 210. Given in French.

308. Business French. 5 hours.

Prerequisite: FR 210 or permission of department.

The course, conducted in French, studies types of French businesses, advertising, postal services, banks, business correspondence, etc. Emphasis is placed on practical application, with a close examination of business documents.

310. French Literature from the Middle Ages to the 17th Century. 5 hours.

Intensive reading and analysis of the major works of representative French writers and study of the main literary movements from the medieval period to the end of the 17th Century. Given in French.

311. French Literature from 1700 to 1848. 5 hours.

Intensive reading and analysis of the major works of representative French writers and study of the main literary movements from 1700 to 1848. Given in French.

312. French Literature from 1848 to the Present. 5 hours.

Intensive reading and analysis of the major works of representative French writers and study of the main literary movements from 1848 to the present. Given in French.

322H. Modern French Literature (Honors). 5 hours.

Not open to students with credit for FR 312. Prerequisite: FR 216H or 211 with Honors standing.

See FR 312. May be substituted by French majors/minors for FR 312. Given in French.

350. French for Reading Knowledge. 5 hours.

Rapid survey of grammar, idioms and vocabulary; practice in translating moderately difficult technical and non-technical French. Intended to assist graduate students to satisfy reading knowledge requirement but does not carry graduate credit; not to be used to satisfy undergraduate language requirement; not open to French majors.

352. French Diction. 1 hour.

Prerequisite: Permission of department.

A study of French pronunciation, with special emphasis on the fundamentals of French phonetics and sound production as applied to reading and singing. Open to voice majors and others interested. Two class hours per week.

355. Spoken French for Travelers. 5 hours.

Prerequisite: FR 104 or equivalent.

Drill in practical use of French language as a

conversational medium. Introduction to daily life in France. The course will be given entirely in French.

395, 396, 397. Study Abroad in French. 5 hours each; maximum 15 hours.

Courses in French language offered by the Study Abroad Program of the University System of Georgia.

410. French Culture and Civilization. 5 hours.

A study of the history of French culture and of its contribution to world civilization from the Middle Ages to the present. Social, political, cultural and technical developments are illustrated in lectures, slide shows and discussions. Given in French.

411. France Since 1968. 5 hours.

The making of contemporary French society from 1968 to the present, as derived from analysis of the interrelationship of cultural, social, economic and political factors. Given in French.

420. The Middle Ages and Humanism. 5 hours.

Prerequisite: FR 310 or permission of department.

Intensive reading and analysis of the major works of representative French authors and study of the main literary movements to 1600. Given in French.

429. Classicism. 5 hours.

Prerequisite: FR 310 or permission of department.

A study of the growth and development of French Classicism with particular emphasis on such writers as Descartes, Pascal, Molière, Racine, and La Fontaine. Given in French.

440. The Age of Reason. 5 hours.

A study of precursors and principal figures of the French Enlightenment. Given in French.

450. Romanticism. 5 hours.

The origins, development and manifestations of the romantic movement in France. Given in French.

464. Realism, Naturalism, Symbolism. 5 hours.

Prerequisite: FR 211 or permission of department.

Major authors of the Post-Romantic part of the 19th Century: Flaubert, Zola, Baudelaire, Rimbaud, Verlaine, Mallarmé. Given in French.

470. The Early 20th Century. 5 hours.

Prerequisite: FR 311 or 312 or permission of department.

A study of the major writers and literary movements between 1900 and 1919. Given in French.

480. From Surrealism to Existentialism. 5 hours.

Prerequisite: FR 312 or permission of department.

A study of French literature between 1919 and 1960, with an emphasis on writers representative of the Surrealist and Existentialist movements. Given in French.

490. The New Wave. 5 hours.

Prerequisite: FR 311 or 312 or permission of department.

A study of the major writers and literary movements of contemporary France. Given in French.

495, 496, 497. Study Abroad in French. 5 hours each; maximum 15 hours.

Courses in French offered by the Study Abroad Program of the University System of Georgia.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

503. Oral French for Teachers. 5 hours.

Development of advanced level listening and speaking skills emphasizing idiomatic aspects of French grammar and vocabulary expansion.

507F. Applied French Linguistics. 5 hours.

The applications of the science of linguistics to the methodology of teaching French.

556. Advanced French Syntax and Composition. 5 hours.

Comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of French. Acquired knowledge will be applied in weekly compositions.

557. French Phonetics. 5 hours.

A careful analysis of each of the sounds in French language followed by intensive drill in the accurate pronunciation of these sounds in connected discourse. Practice in phonetic transcription; use of tapes.

570F. (LIN) History of the French Language. 5 hours.

A history of the development of the French language from Latin to the present.

Italian (ITA)

101. Elementary Italian. 5 hours.

Teaches conversation, fundamentals of grammar, pronunciation and reading. Students in this course are required to spend a minimum of one hour a week outside of class in the language lab.

102. Elementary Italian. 5 hours.

Prerequisite: ITA 101 or one entrance unit in Italian.

A continuation of ITA 101.

103. Beginning Italian. 5 hours.

Prerequisite: ITA 102 or two entrance units in Italian.

A continuation of ITA 102.

104. Intermediate Italian. 5 hours.

Prerequisite: ITA 103 or equivalent.

Extensive reading of texts of literary merit. Grammar review, conversation and pronunciation. Also prepares students to enter courses in Italian literature (310, 311) and Italian composition and conversation (306).

306. Italian Conversation and Composition. 5 hours.

Prerequisite: ITA 104.

The emphasis is divided between conversation and composition. The two phases of the course are correlated to promote students' ability to express themselves accurately in both oral and written Italian. Given in Italian.

310. Italian Literature from the Middle Ages to the End of the 17th Century. 5 hours.

Prerequisite: ITA 104.

Intensive reading and analysis of the major works of representative Italian writers and study of the main literary movements in Italian literature from its origins to the end of the 17th Century. Given in Italian.

311. Italian Literature from 1700 to the Present. 5 hours.

Prerequisite: ITA 104.

Intensive reading and analysis of the major works of representative Italian writers and study of the main literary movements in Italian literature from the 18th to the 20th Centuries. Given in Italian.

352. Italian Diction. 1 hour.

Prerequisite: Permission of department.

A study of Italian pronunciation, with special emphasis on the fundamentals of Italian phonetics and sound production as applied to reading and singing. Open to voice majors and others interested. Two class hours per week.

360. Intensive Italian. 5 hours.

Prerequisite: Previous study of another Romance language or Latin, or by permission of department.

A concentrated course with fluent and accurate reading of the language as the main objective. Elements of grammar, practice in reading contemporary texts, and oral practice.

395, 396, 397. Study Abroad in Italian. 5 hours each; maximum 15 hours.

Prerequisite: Permission of department.

Courses in Italian offered by programs in Italy approved by the department.

401, 402, 403. Independent Reading and/or Projects. 5 hours each.

Prerequisite: ITA 104 or 360.

These courses allow students the opportunity to engage in individual study, reading or projects, under the direction of a project director. The courses may not be repeated for credit.

421. The Divine Comedy. 5 hours.

Prerequisite: ITA 104 or 306 or 310.

Detailed study of one of the most important works of literature provided in the western world. Given in Italian.

431. Petrarch and Boccaccio. 5 hours.

Prerequisite: ITA 310 and 311.

A study of early Italian humanism through the *Canzoniere* and selected prose works of Petrarch and the *Decamerone* of G. Boccaccio. Given in Italian.

471. The Italian Novel. 5 hours.

Prerequisite: ITA 310 and 311.

A study of the Italian novel from Manzoni to the present, including works by Verga, Pirandello, Svevo, Pavese, Vittorini, and Calvino. Given in Italian.

491. Topics in Italian Literature. 5 hours.

Prerequisite: ITA 310 and 311.

A study of specific Italian literary works, to be selected according to students' needs and interests. Selection may be determined by genre, author, or period. Lectures, papers, and reports. Given in Italian.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides the opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Portuguese (POR)

101. Elementary Portuguese. 5 hours.

Teaches conversation, fundamentals of grammar, pronunciation, and reading. Students in this course are required to spend a minimum of one hour a week outside of class in the language lab.

102. Elementary Portuguese. 5 hours.

Prerequisite: POR 101.

A continuation of POR 101.

103. Beginning Portuguese. 5 hours.

Prerequisite: POR 102 or equivalent.

A continuation of POR 102.

104. Intermediate Portuguese. 5 hours.

Prerequisite: POR 103 or equivalent.

Extensive reading of texts of literary merit. Grammar review, conversation and pronunciation. Also prepares students to enter courses in Portuguese composition and conversation (306) and Portuguese literature (420).

306. Portuguese Conversation and Composition. 5 hours.

Prerequisite: POR 104 or 360 or permission of department.

The emphasis is divided between conversation and composition. The two phases of the course are correlated to promote students' ability to express themselves accurately in both oral and written (Brazilian) Portuguese. Given in Portuguese.

360. Intensive Portuguese. 5 hours.

Prerequisite: Previous study of another Romance language or Latin, or by permission of department.

A concentrated course with fluent and accurate reading of the language as the main objective. Elements of grammar, practice in reading contemporary texts and oral practice.

420. Masterpieces of Luso-Brazilian Literature. 5 hours.

A study of major Portuguese and Brazilian writers from the beginning to the present. Given in Portuguese.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

Prerequisite: POR 360 or permission of department.

These courses afford students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

Prerequisite: POR 360 or permission of department.

This course provides the opportunity for an

Honors student to undertake individual research in the field of his/her major or in a closely related field.

570P. (LIN) History of the Portuguese Language. 5 hours.

Prerequisite: SP 104 or FR 104 or ITA 104 or LAT 203 or permission of department.

A history of the Portuguese language from the appearance of the earliest texts until the present time with discussion of phonetics, morphology, semantics, and loan-words. Given in English.

Romance (ROM)

Courses given in English with readings in English translation. These courses may not be used to satisfy degree requirements in foreign languages.

510. Introduction to Bibliography. 1 hour.

An introduction to the methods and materials of scholarly research. The student will learn how to locate, use, and present information pertinent to the study of Romance languages.

Spanish (SP)

101. Elementary Spanish. 5 hours.

Only for students with no previous knowledge of Spanish.

Teaches conversation, fundamentals of grammar, pronunciation, and reading. Students in this course are required to spend a minimum of one hour a week outside of class in the language lab.

101A. Elementary Spanish. 5 hours.

An introductory course for students who present college entrance units in high school Spanish but whose placement score is below that required for SP 102.

102. Elementary Spanish. 5 hours.

Prerequisite: SP 101, 101A, or one entrance unit in Spanish.

A continuation of SP 101.

103. Beginning Spanish. 5 hours.

Prerequisite: SP 102 or two entrance units in Spanish.

A continuation of SP 102.

104. Intermediate Spanish. 5 hours.

Prerequisite: SP 103 or equivalent.

Extensive reading of texts of literary merit. Grammar review, conversation, and pronunciation. Also prepares students to enter courses in Spanish literature (211) or Spanish composition and conversation (210, 355).

104A. Intermediate Spanish (Culture and Civilization). 5 hours.

Prerequisite: SP 103 or equivalent.

Readings and discussions of Spanish culture, civilization, and current events. Fourth-quarter language review, with emphasis on oral practice and reading comprehension. Also prepares students to enter courses in Spanish literature (211) and Spanish composition and conversation (210, 355).

104B. Intermediate Spanish (Commercial Spanish). 5 hours.

Prerequisite: SP 103 or equivalent.

General readings and discussions about the commerce and economics of the Hispanic world with particular emphasis on basic commercial and corporate vocabulary, letter writing. Spanish and American equivalent commercial systems and languages. Also qualifies students to enter courses in Spanish literature (211) and Spanish composition and conversation (210, 355).

104C. Intermediate Spanish (Spanish for Health Professionals). 5 hours.

Prerequisite: SP 103 or equivalent.

Readings and discussions about the social and health professions with emphasis on basic technical vocabulary. Fourth-quarter language review. Also qualifies students to enter courses in Spanish literature (211) and Spanish composition and conversation (210, 355).

113H. Accelerated Intermediate Spanish I (Honors). 5 hours.

Not open to students with credit for SP 102 or 103.

Prerequisite: SP 101, 101A, or equivalent. (Advanced Placement test scores may be considered as the equivalent.)

Primarily an intensive grammar course covering material studied in SP 102 and 103. Honors students who do satisfactory work in this course may substitute it for SP 102 and 103.

114H. Accelerated Intermediate Spanish II (Honors). 5 hours.

Not open to students with credit for SP 104, 104A, 104B, or 104C.

Prerequisite: SP 113H or equivalent.

Emphasis on advanced readings and grammar review.

210. Spanish Conversation and Composition. 5 hours.

Prerequisite: SP 104, 104A, 104B, 104C, or 114H.

The emphasis is divided between conversation and composition. The two phases of the course are correlated to promote the student's ability to express himself/herself accurately whether in speaking or in writing Spanish. Given in Spanish.

211. Critical Reading of Spanish Literature. 5 hours.

Prerequisite: SP 104, 104A, 104B, 104C, or 114H.

An introduction to the critical reading and interpretation of Spanish and Spanish-American literature through the study of representative masterpieces in various genres. The student will be presented with the basic vocabulary and techniques of literary analysis and criticism. Given in Spanish.

215H. Spanish Conversation and Composition (Honors). 5 hours.

Not open to students with credit for SP 210.

Prerequisite: SP 114H or 104, 104A, 104B, 104C with Honors standing.

See SP 210. May be substituted by Spanish majors/minors for SP 210. Given in Spanish.

216H. Critical Reading of Spanish Literature (Honors). 5 hours.

Not open to students with credit for SP 211.

Prerequisite: SP 114H or 104, 104A, 104B, 104C with Honors standing.

See SP 211. May be substituted by Spanish majors/minors for SP 211. Given in Spanish.

SP 210 (or 215H) is prerequisite to all advanced Spanish language and civilization courses. SP 211 (or 216H) is prerequisite to all advanced Spanish literature courses.

306. Spanish Conversation and Composition. 5 hours.

Designed to provide additional practice in Spanish conversation and composition beyond SP 210. Given in Spanish.

310. Spanish Literature from the Middle Ages to 1700. 5 hours.

Intensive reading and analysis of the major works of representative Spanish writers and study of the main literary movements beginning with the origins of Spanish literature and continuing through the 17th Century. Given in Spanish.

311. Spanish Literature from 1700 to the Present. 5 hours.

Intensive reading and analysis of the major works of representative Spanish writers and study of the main literary movements from 1700 to the present. Given in Spanish.

312. Spanish American Literature to the End of the 19th Century. 5 hours.

Intensive reading and analysis of the major works of representative Spanish American writers and study of the main literary movements in Spanish American literature from its origins to the end of the 19th Century. Given in Spanish.

313. Spanish American Literature from the End of the 19th Century to the Present. 5 hours.

Intensive reading and analysis of the major works of representative Spanish American writers and study of the main literary movements from the end of the 19th Century to the present. Given in Spanish.

321H. Modern Hispanic Literature (Honors). 5 hours.

Not open to students with credit for SP 311.

Prerequisite: SP 216H or 211 with Honors standing.

See SP 311. May be substituted by Spanish majors/minors for SP 311. Given in Spanish.

350. Spanish for Reading Knowledge. 5 hours.

Rapid survey of grammar, idioms and vocabulary; practice in translating moderately difficult technical and non-technical Spanish. Intended to assist graduate students to satisfy reading knowledge requirement, but does not carry graduate credit; not to be used to satisfy undergraduate language requirement; not open to Spanish majors.

355. Spoken Spanish for Travelers. 5 hours.

Prerequisite: SP 104 or equivalent.

Designed to improve the student's pronunciation and to make him/her more proficient in the practical use of Spanish in conversation. Given in Spanish.

395, 396, 397. Study Abroad in Spanish. 5 hours each; maximum 15 hours.

Courses in Spanish language offered by the Study Abroad Program of the University System of Georgia.

410. Spanish Culture and Civilization. 5 hours.

A study of the geography, history, arts, and letters of Spain from the beginnings to the present. Emphasis will be placed on the modern historical, political, and intellectual developments. Given in Spanish.

411. Spanish American Culture and Civilization. 5 hours.

A study of the geography and complex process of the cultural, historical, and political evolution of the Spanish American countries from the origins of the indigenous civilizations to the present. Given in Spanish.

428. The Middle Ages. 5 hours.

Prerequisite: SP 310 or permission of department.

A course devoted to the principal literary works of the Spanish Middle Ages (1150-1500). Given in Spanish.

430. The Renaissance. 5 hours.

Prerequisite: SP 310 or permission of department.

A study of the representative literary works in the Spanish Renaissance, with emphasis on Encina, Torres Naharro, Lope de Rueda, and Garcilaso de la Vega and on the sentimental, picaresque, Moorish, and pastoral novels. Given in Spanish.

440. Baroque Literature. 5 hours.

Prerequisite: SP 310 or permission of department.

Study of Spanish Baroque literature (approximately 1600-1700) in all genres: drama, prose fiction and poetry, and representing the major authors of this period. Given in Spanish.

445. Don Quijote. 5 hours.

Prerequisite: SP 310 or permission of department.

A study of the *Quijote*, concentrating on an explanation of the text and on its style and themes. Given in Spanish.

450. The Enlightenment. 5 hours.

A study of the developments in Spanish letters and thought in the 18th Century. Given in Spanish.

465. Romanticism. 5 hours.

A study of the origins and development of the romantic movement in Spain. Given in Spanish.

470. Realism and Naturalism. 5 hours.

Prerequisite: SP 311 or permission of department.

A study of the nineteenth-century Spanish novel as it developed within the realist and naturalist literary movements. Given in Spanish.

480. From the Generation of 1898 to the Civil War. 5 hours.

Prerequisite: SP 311 or permission of department.

The development of Spanish literature from the Generation of 1898 to the Civil War. Given in Spanish.

481. Modernism. 5 hours.

A study of Rubén Darío, his contemporaries, and followers. Given in Spanish.

490. Contemporary Spanish Literature. 5 hours.

Prerequisite: SP 311 or permission of department.

A study of the Spanish literature from 1939 (end of the civil war) to the present. Given in Spanish.

491. Contemporary Spanish-American Literature. 5 hours.

Prerequisite: SP 312 or 313 or equivalent or

permission of department.

A study of contemporary writers since Modernism to the present, including various literary movements of the period. The course concentrates on those authors whose works are most relevant to an understanding of the cultural forces in Spanish America today. Given in Spanish.

495, 496, 497. Study Abroad in Spanish. 5 hours each; maximum 15 hours.

Courses in Spanish offered by the Study Abroad Program of the University System of Georgia.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides the opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

503. Oral Spanish for Teachers. 5 hours.

Development of advanced level listening and speaking skills emphasizing idiomatic aspects of Spanish grammar and vocabulary expansion.

507S. Applied Spanish Linguistics. 5 hours.

The applications of the science of linguistics to the methodology of teaching Spanish.

556. Advanced Spanish Syntax and Composition. 5 hours.

A comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of Spanish.

557. Spanish Phonetics. 5 hours.

A study of the organs of speech, the difference in production of Spanish and English speech sounds, and the various speech phenomena. Practice in phonetic transcription, pronunciation, and intonation.

570S. (LIN) History of the Spanish Language. 5 hours.

A history of the development of the Spanish language from Latin to the present.

SANSKRIT (SKT)

461. (LIN) Structure of Sanskrit I. 5 hours.

See LIN 461.

462. (LIN) Structure of Sanskrit II. 5 hours.

See LIN 462.

SCIENCE (SCI)

207H, 208H, 209H. Honors Science. 6, 7, and 7 hours respectively.

Satisfies total Natural Science requirement of A.B. and related majors, including majors in art, drama and music which carry a 20-hour science requirement. The course sequence presents the basic concepts of biology, chemistry, geology, and physics in an integrated fashion. It traces the evolution of the universe from the primordial state to the present time, and, in particular, considers man's interaction with his surroundings. NOTE: Not open to students in B.S. degree programs in Arts and Sciences.

421H, 422H, 423H. Special Problems Seminar in Science (Honors). 1-5 hours each.

These courses provide opportunity for investigation and study of selected problems in the general areas of science which have current relevance to members of the University community. Topics will vary to meet interest and demand.

SOCIAL SCIENCE (SOS)

The following courses are offered under the general direction of the Chairman of the Division of Social Sciences.

104. Contemporary Georgia. 5 hours.

A survey course dealing with current economic, social and political situations in Georgia. Basic geographical features, historical highlights and cultural heritage are included. A study of state government organization including education, agriculture, industry, welfare programs, offender rehabilitation and related legislative and executive action. Changes resulting from population mobility are noted. Also see pages 28-29, Examinations on the Constitution.

399. Georgia Intern Program. 5-15 hours.

Prerequisite: Upper division standing, permission of department.

Participation in the activities of a state, county, or municipal agency or governmental office under the direction of a faculty member. The project shall be related to at least one of the academic disciplines of the division.

401H, 402H, 403H. Special Problems Seminar in Social Science (Honors). 1-5 hours each.

Prerequisite: Permission of the Honors office. These courses provide opportunities for investigation and study of selected problems in the area of social sciences which have special or current relevance to members of the University

community. Topics will vary to meet interest and demand.

SOCIOLOGY (SOC)

SOC 105 or 206H or 256 or 260 (or equivalent) is a prerequisite to all upper division courses in sociology. The major includes SOC 422 and one other theory course, SOC 356 and 420, two courses from the subject matter core, and two courses from one special area. The minor includes 20 hours of upper division courses (consult advisors in Sociology department).

105. Introductory Sociology. 5 hours.

An introduction to the sociological analysis of society, its origins, structure, change and problems. Emphasis is on the nature of culture, social interaction, social groups and social institutions.

206H. Introductory Sociology (Honors). 5 hours.

Not open to students with credit for SOC 105. A general introduction to fundamental concepts, theories, methods and major subfields of sociology. Among other purposes will be that of showing the relationships of sociology to other fields of study.

256. (PSY) Interpersonal Behavior. 5 hours.

See PSY 256.

260. Contemporary Social Problems. 5 hours.

A study of the problems of our times and their social and cultural causes and consequences. An introduction to both deviance and social disorganization are considered.

Social Theory

422. Development of Sociological Theory. 5 hours.

A survey of some of the most important systems in the development of sociological theory.

423. German Social Theorists. 5 hours.

Prerequisite: SOC 105.

An analysis of German sociological thought in the 19th and 20th centuries. The course will focus on three major theorists (Marx, Simmel and Weber) and three major systems of thought (critical theory, phenomenology, and the sociology of knowledge).

426. Modern Sociological Theory. 5 hours.

Prerequisite: SOC 422.

A systematic analysis of the trends and developments in sociological theory since about 1920. Particular emphasis is placed on the current state of sociological theory and its relationship to empirical research.

471. (PHY) Philosophy of Social Science. 5 hours.

A study of the methods and problems of inductive reasoning, including the nature of probable inference, techniques of verification, and the structure of scientific explanation, with special reference to the social sciences.

Research Methods

356. The Analysis of Sociological Data. 5 hours.

An undergraduate survey course on application of quantitative analyses to research data.

370. (POL/PSY) Scientific Analysis in Criminal Justice. 5 hours.

See POL 370.

420. Methods of Social Research. 5 hours.

Prerequisite: SOC 356 or permission of department.

Scientific methods of social research; considerations in research design; sources of data and data collection, qualitative and quantitative techniques for measurement, analysis and inference of social data.

456. Techniques of Population Analysis. 5 hours.

Techniques for analyzing the composition of the population; constructing life tables; measuring vital processes; and estimating population and migration.

523. Supervised Research in Sociology.

Prerequisite: SOC 420 or equivalent.

Students are individually supervised in their participation in ongoing faculty research projects for a minimum of 100 hours per quarter.

559. Community Reconnaissance Methods. 5 hours.

Prerequisite: SOC 435.

A study and application of methods of research in community organization for action programs. The application will include schedule preparation, field interviews, analysis of data and preparation of community reports.

Subject Matter Core

409. Social Change. 5 hours.

The social process of social change; causes, types and theories of change.

411. Social Organization. 5 hours.

The study of a general model of the social system and the development of a consistent set of theories concerning the structure and process of groups and such complex systems of behavior as organizations, communities and societies.

427. Personality and Social Structure. 5 hours.
Foundation and development of personality; mechanisms of integration and adjustment; roles of culture, groups and language; concepts of self; types and theories of personality; deviant personalities.

433. Population Theory and Problems. 5 hours.

Theory and dynamics of population growth; population pressure; migration; composition; differential fertility, theories of the quality and optimum population; economic and social aspects of our population.

442. American Stratification System. 5 hours.

A systematic analysis of the nature of social status systems, including caste, estate, and class and an examination of the form stratification differences take in the United States. Topics covered include: perception of class distinctions, the factors of prestige and power, criteria of status evaluation, class effects on social relationships and differences in lifestyles, class and personality development.

Special Areas

111. Structure and Functioning of American Society. 5 hours.

A functional analysis of major institutions and processes in contemporary American society.

373. (PSY) Social Psychology. 5 hours.

See PSY 373.

383H. (PSY) Social Psychology (Honors Colloquium). 5 hours.

Not open to students with credit for SOC (PSY) 373.

Prerequisite: SOC 105 or PSY 101.

Deals with those aspects of human behavior which are the consequence of human groups. The social origins of personality, communication, language, roles and group influences or attitudes and behavior will be dealt with.

402. Structure and Functioning of American Society with Emphasis on Black Structure. 5 hours.

A functional analysis of Black institutions in relation to contemporary society.

407. Juvenile Delinquency. 5 hours.

A detailed analysis of the nature, extent, and causes of juvenile deviance and delinquency with special emphasis on the handling of juveniles in the criminal justice system and on programs designed to treat or prevent delinquency.

410. Sociology of Medicine. 5 hours.

A sociological analysis of the interrelationship

between illness and the social system. Special attention is given to health care organization.

428. Sociology of Sex Roles. 5 hours.

An analysis of the structure of sex roles in American Society as well as relevant cross-cultural comparisons. With a dual emphasis on methodology and content, it will include an analysis of sex role differences, the intermeshing of sex roles and social change, sex as a stratifying variable and the social psychological aspects of femininity and masculinity.

431. Rural Social Systems. 5 hours.

An investigation into the characteristics and the organization of the changing rural society. Analysis of the social organization of agriculture and rural-urban relations will be emphasized.

432. The Sociology of Urban Life. 5 hours.

Development of the city as a social phenomenon in the modern world. Analysis of urban trends, characteristics, functions, and social organization. Sociological elements in urban planning, housing and metropolitan dominance, and growth patterns in new centers of urbanization.

435. The Community. 5 hours.

A study of the community as a unit of social organization. Contemporary trends in community organization and planning.

436. Latin American Social Systems and Development. 5 hours.

A description of Latin American social systems as they influence the developmental process, with special attention given to social class, urbanization, demographic change and ecological patterns.

437. Race Relations in the United States. 5 hours.

An examination of the social problems associated with race and minority relations in contemporary American society.

452. Fertility of the Population. 5 hours.

Prerequisite: SOC 451 or permission of department.

Levels, trends and differentials in fertility among various population groups; techniques and problems of measurement; and the social, psychological and biological aspects of human fertility.

461. (CFD) The Family. 5 hours.

See CFD 461.

465. Sociology of Aging. 5 hours.

An examination of the sociological approaches to aging, the status of older people, their roles in the community and society, demographic

aspects of aging, and their interrelationships with society and social institutions.

466. Aging and Modernization: Cross-Cultural Studies. 5 hours.

An analysis of the aging experience in different societies and historical periods. The course will focus on differences in patterns of aging among societies of varying levels of modernization and on the impact on age relations of the transition from an agrarian economy to an industrial one.

480. Industrial Sociology. 5 hours.

A study of human relations in the industrial setting and the relationship of industrialization and the work environment to the worker, the community and the larger society.

481. Criminology. 5 hours.

The study of the nature, extent, and factors related to criminal behavior. Focus will be on the criminal justice system; the police, the judiciary and corrections (probation, imprisonment, parole, work release, and half-way houses).

483. Sociology of Law. 5 hours.

Prerequisite: SOC 105 or equivalent (206H, 256, or 260) or permission of department, and three upper division social science courses.

A study of the social nature of law, and how the legal system reflects the broader social context within which it exists. The law and the legal system are seen as natural phenomena and another manifestation of social activity.

485. Sociology of Occupations. 5 hours.

A comparative study of work positions and roles in modern American society with emphasis given to such topics as occupational choice, socialization, worker adjustment, prestige, and mobility.

490. Senior Seminar in Sociology. 5 hours.

A program of semi-independent study including reading, writing, and discussions on sociologically relevant topics of interest to the student.

495. Large Organizations. 5 hours.

Major approaches to the study of large organizations; theories of bureaucratic structure; relationship of personality to formal and informal structures.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499. Senior Thesis. 5 hours.

Prerequisite: Sociology major, senior standing,

and permission of department.

Senior thesis in sociology provides the opportunity to earn distinction within the department through a demonstration of scholarship with the completion of a faculty supervised thesis.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

502. Community Development. 5 hours.

A study of approaches, principles, techniques, and programs of comprehensive community development.

515. Seminar in Corrections. 5 hours.

Review of principles of correction; field observation and analysis of current practices; evaluation of observations and development of career potential in various aspects of criminal justice administration.

516. Special Projects in Applied Criminology. 5 hours.

A study in depth, beyond the level of survey, of the most important literature of theories and practices in criminal justice. The course will provide a critical analysis of the literature.

528. (EPH) Sociology of Education. 5 hours.

Social perspectives on education: the society, the community, and the school.

550ABC. (POL/PSY) Internship in Criminal Justice. 5 hours each; maximum 15 hours.

See POL 550ABC.

SPEECH COMMUNICATION (SPC)

For the A.B. degree in Speech Communication, a student may choose one of four programs: (1) **PUBLIC COMMUNICATION:** required courses—108, 109, 218H or 219H; a 200/300 level speech communication course; 350, 351, or 355; 459; an advanced interpersonal course; and 20 hours of Advanced Public Communication courses; (2) **INTERPERSONAL COMMUNICATION:** required courses—108, 109, 218H or 219H; one 200/300 level speech communication course; 256; 520; and an advanced Public Communication course; and 20 hours of Advanced Interpersonal Communication courses; (3) **COMBINED PUBLIC AND INTERPERSONAL COMMUNICATION MAJOR:** required courses: 108, 109, 218H or 219H; two 200/300 level speech communication courses: 459; 520; 10 hours of Advanced Public Com-

munication courses; 10 hours of Advanced Interpersonal Communication courses; (4) **GENERAL SPEECH COMMUNICATION WITH CERTIFICATION:** Students desiring to gain certification to teach speech should contact the Department of Language Education for specific requirements.

108. Fundamentals of Speech Communication. 5 hours.

A first course in the fundamental principles of effective oral communication. Special attention is given to the selection and organization of materials, the presentation of speeches, and the development of an acceptable speaking voice.

109. (MAN) Interpersonal Communication. 5 hours.

Study of communication as it occurs in two-person and small group settings. Primary concern is given to understanding how an individual can use verbal and nonverbal communication to improve relationships and derive maximum social rewards. Emphasis is placed on student involvement in class exercises and discussions.

209. Phonetics. 5 hours.

Prerequisite: SPC 108.

A study of the production of the sounds of English and their relation to the voice and diction improvement with emphasis on phonetic transcription.

210. Voice and Diction. 5 hours.

Prerequisite: SPC 108 or permission of department.

Course designed to aid the student in developing effective voice production, clear articulation, acceptable pronunciation, and pitch variation, rhythm and phrasing.

218H. Oral Communication as a Liberal Art (Honors). 5 hours.

Not open to students with credit for SPC 108. Deals with the evolution of the social theory, including the classical canons of invention, disposition, style, and delivery as applied to contemporary public address.

219H. Introduction to Interpersonal Communication Theory, Research and Practice. 5 hours.

Not open to students with credit for SPC(MAN) 109.

An introduction for Honors Students to communication as it occurs in dyads and small groups. Through lectures, class discussions and exercises, students will critically examine theory and research in Interpersonal Communication. Emphasis will be placed both on learning about the communication process

and on becoming a more effective participant in it.

240. Parliamentary Procedure. 3 hours.

An introduction into the theory and practice of parliamentary procedure in a democratic society. Emphasis will be placed on the study of the rules of parliamentary law as well as practicing the application of these rules in business meetings.

250. Public Speaking. 5 hours.

Prerequisite: SPC 108 or SPC (MAN) 109 or permission of department.

A study of the various forms of public address; practice in the preparation and delivery of several types of speeches.

251. Applied Public Communication. 5 hours.

Prerequisite: SPC 108 or permission of department.

Emphasizes student practice in public communication contexts such as press conferences, media interviews, and persuasive speaking to hostile audiences. Extensive use of videotape.

256. (MAN) Discussion Methods. 5 hours.

Prerequisite: SPC 108 or SPC (MAN) 109 or permission of department.

Emphasizes student involvement in groups working on socially significant projects of their own choice. Factors which affect quality of communication and group outcomes—interpersonal and task behaviors, leadership, norms, conflict resolution, and creativity—are examined.

267. Introductory Interviewing. 5 hours.

Designed to give the student experience in dealing with a number of types of dyadic communication situations. Transactions arising in ongoing relationships (e.g., parent-child, teacher-student, sibling pair), as well as temporary relationships (e.g., customer-salesperson) are examined.

324. Nonverbal Communication. 5 hours.

Designed to familiarize the student with the fundamental nature and functional importance of nonverbal communication in interpersonal interaction. Particular emphasis is placed on the potential of each system for attaining the individual's communicative objectives. Each student's capacity to transmit and perceive meanings nonverbally is tested and training provided for the development of this capacity. The student uses knowledge and experience gained from participation in class to diagnose and analyze communication problems most closely associated with nonverbal communication. The learning experience is heightened by the use of com-

munication labs which concentrate on the different nonverbal communication systems.

328. Intercultural Communication. 5 hours.

Introduces the student to the difficulties encountered when persons from different cultures communicate. Thus, the effect of culture upon communication is stressed. Simulations are used to provide the students with experience attempting to communicate across cultural barriers and stimulate development of skills for intercultural communication. Both theoretical and practical problems of intercultural communication are analyzed.

350. Argumentation and Debate. 5 hours.

Principles of logical proof as applied in argumentation and debate. Theory and practice in analysis, investigation, brief-making, refutation, evidence, forms of argument, fallacies, and debate procedures.

351. Persuasion. 5 hours.

Prerequisite: SPC 108 or SPC (MAN) 109 or permission of department.

A study of the way in which beliefs, attitudes, values and behavior are formed and changed.

355. Studies in Black Rhetoric. 5 hours.

A study of the history and criticism of the communication of Black speakers, with emphasis upon oral rhetoric relating to social-political developments since 1860.

455. Rhetorical Composition and Criticism. 5 hours. Two 2-hour periods weekly.

Prerequisite: Two senior division courses in speech communication or English.

An advanced course dealing with the study of rhetorical theory and criticism.

456. (MAN) Group Discussion and Conference Leadership. 5 hours. Two 2-hour periods weekly.

Prerequisite: Two senior division courses in speech communication, business administration, education, or permission of department. A study of the theory and techniques of group discussion with emphasis on current experimentation and research.

459. Foundations of Rhetorical Theory. 5 hours. Two 2-hour periods weekly.

Prerequisite: Two senior division courses in speech communication or English.

A study of origin and development of rhetorical theory from ancient to modern times.

462. Communication Strategies in the Courtroom. 5 hours. Two 2-hour periods weekly.

Prerequisite: Two senior division courses in social science, journalism, or related areas. Examines modern communication theories and their application to legal proceedings.

463. Communication Strategies in Government. 5 hours. Two 2-hour periods weekly.
Prerequisite: Two senior division courses in social science, journalism, or related areas.
A study of communication strategies and activities in the executive and legislative branches of American government, with some emphasis on communication case studies.

464. Communication Strategies in Religion. 5 hours. Two 2-hour periods weekly.
Prerequisite: Two senior division courses in social science, journalism, or related areas.
A study of the theory and practice of communication in religious settings. Emphasis will be placed on communication within particular religious communities and communication from such groups to society generally.

465. Communication Strategies in Political Campaigns. 5 hours. Two 2-hour periods weekly.
Prerequisite: Two senior division courses in social science, journalism, or related areas.
The role communication plays in deciding which candidate will run for office, the nomination of candidates, and the election of candidates to office.

466. (PSY) Psychology of Speech Communication. 5 hours. Two 2-hour periods weekly.
Prerequisite: Two senior division courses in speech communication, psychology, or English.
A study of speech as a psychological phenomenon with consideration of the use of symbols, the speech personality, emotional reactions, and mental processes in speech communication, and psychological studies of language and vocal and visual symbolism.

467. (MAN) Interviewing. 5 hours. Two 2-hour periods weekly.
Prerequisite: Junior or senior standing.
A review of various theories of interpersonal communication and of pertinent research in the area of interviewing. Application of modern communication theory to interview situations. A consideration of the various types of interviews and the problems unique to each type with a variety of teaching techniques employed.

469. Communication Strategies in Social Movements. 5 hours. Two 2-hour periods weekly.
Prerequisite: Two senior division courses in social science, journalism or related areas.
An examination of the rhetorical nature of social movements with theories of communication strategies applied in several case studies.

472. Communication Strategies in International Affairs. 5 hours. Two 2-hour periods weekly.
Prerequisite: Two senior division courses in social science, journalism or related areas.
A study of the communication strategies of nations in two focal areas. First, the intranational communications involved—such as Presidential speeches to the public and Congress; discussions by Cabinet members (e.g., before the Cuban Missile Crisis) or Congressional Committees (e.g., in Tonkin Resolution). Second, the strategies of nations communicating with each other in settings like the UN, the Munich Conference, and the Versailles Treaty negotiations. Attention will be given both to case studies and general principles or theories.

473. Classical Rhetoric. 5 hours. Two 2-hour periods weekly.
Prerequisite: Two senior division courses in social science, journalism or related areas.
A study of the development of classical rhetoric in the Greek and Roman periods, Plato to Quintilian.

478. Modern Rhetorical Theory. 5 hours. Two 2-hour periods weekly.
Prerequisite: Two senior division courses in social science, journalism or related areas.
A study of the development of rhetorical theory from 1700 to the present.

490. Special Topics in Speech Communication. 5-10 hours.
Prerequisite: Two senior division courses in social science, journalism or related areas.
Course to be taught in Speech Communication as an extension of present subject areas and in speech communication topics not covered by present curriculum.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.
This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

520. (JRL) Communication Theory. 5 hours.
Prerequisite: SPC 108 or 256 or equivalent, or JRL 101.
Familiarizes the student with the fundamental nature of and problems in interpersonal and group communication. Communication is studied from the scientific perspective with emphasis on factors that measurably affect

quality of communication. Students analyze communication situations of their own choice.

522. (JRL) Mass Communication and Persuasion. 5 hours.

See JRL 522.

550. Teaching of Debate. 5 hours.

Prerequisite: Two or more senior division courses in speech communication or education.

Principles of argumentation and debate with emphasis on administration of the secondary school debate program.

593. (ESP) Speech Communication for the Elementary Teacher. 5 hours.

Prerequisite: Two senior division courses in speech communication, drama and/or elementary education.

A study of the various speech activities for elementary school children.

596. (MAN) Organizational Communication. 5 hours.

See MAN 596.

STATISTICS (STA)

Students may elect to earn either a B.S. or an A.B. degree in Statistics. The departmental requirements are the same in either case with 40 hours of major coursework and an additional 20 hours of non-major requirements. No course in which a D or F is made can be used as a major course.

All statistics majors will be required to take CSC 201 (or CSC 500), MAT 253, MAT 254, MAT 255, MAT 256, MAT (STA) 471, and MAT (STA) 472. Each student then selects an option in either (a) Statistical Methods, or (b) Mathematical Statistics. For (a) the required courses are STA 421, STA 422, and STA 451 and for (b) STA 451, STA 452, MAT 358, MAT 410, and MAT 411 are required. Additional courses for each option should be selected from other 400-level statistics or mathematics courses.

A detailed description of course requirements can be obtained from the departmental office, 415 Boyd GSRC.

200. Elementary Statistics. 5 hours.

Prerequisite: Credit for or exemption from MAT 100.

A basic elementary course in statistics at a level which does not require a knowledge of calculus. See MS 312.

210H. Statistics and Computer Programming I (Honors). 5 hours.

Not open to students with credit for STA 200 or CSC 500.

Prerequisite: Credit for or exemption from MAT 100.

Statistical distributions and their uses, sampling theory, statistical decision-making, hypothesis testing, estimation, sample size determination, with FORTRAN programming and computer application.

211H. Statistics and Computer Programming II (Honors). 5 hours.

Not open to students with credit for STA 200 or CSC 500.

Prerequisite: STA 210H.

Regression and correlation, introduction to experimental design, sample survey design, statistical classification techniques, with FORTRAN programming and computer applications.

221. Introduction to Statistics and Programming I. 5 hours.

Not open to students with credit for STA 200 or CSC 500.

Prerequisite: Credit for or exemption from MAT 100.

Statistical methods and FORTRAN programming, descriptive statistics, distribution models, sampling theory, testing statistical hypotheses, parameter estimation.

222. Introduction to Statistics and Programming II. 5 hours.

Not open to students with credit for STA 200 or CSC 500.

Prerequisite: STA 221.

Continuation of STA 221. Statistical decision-making, regression and correlation, introduction to experimental design and analysis of variance, sample survey techniques.

300. Statistical Methods for Pharmacy. 3 hours.

Prerequisite: MAT 100.

Basic concepts of descriptive statistics including scaling. Introduction to probability and probability distribution with special emphasis on the normal probability distribution, estimation, concepts of tests of significance, t-tests, analysis of variance, chi-square tests and simple linear regression and correlation.

421. Statistical Methods I. 5 hours.

Prerequisite: Credit for or exemption from MAT 100.

Basic concepts of statistical models, sampling, variability in sample data, distributions, estimation of parameters, simple tests of significance, t-tests, analysis of variance, chi-square tests, and simple regression and correlation. Special sections for social scientists and biological scientists are provided. These sections are designated in the *Schedule of Classes*.

422. Statistical Methods II. 5 hours.

Prerequisite: STA 421.

Analysis of variance with multiple classification, covariance, multiple regression, multiple and partial correlation, elements of experimental design.

424. Sampling and Survey Methods. 5 hours.

Prerequisite: STA 421.

Design of sample survey, biases, variances and cost estimators. Comparison of simple random sampling, ratio estimation, stratification, multistage sampling.

427. Least Squares Methods. 5 hours.

Prerequisite: STA 422 and 451.

Least squares using matrix notation. Techniques of matrix algebra and calculus applied to regression and experimental design. (Fall quarter.)

428. Applied Time Series Analysis. 5 hours.

Prerequisite: STA 422.

Autoregressive, moving average, autoregressive-moving average, and integrated autoregressive-moving average processes; seasonal models, autocorrelation function; estimation; model checking; forecasting; spectrum; spectral estimators.

436. Statistical Computation. 5 hours.

Prerequisite: STA 422, CSC 201 or 500, MAT 256.

Algorithms for data analysis computation, characteristics of and criteria for evaluating statistical packages, use of and interpretation of output from current statistical packages.

451. Statistical Theory I. 5 hours.

Prerequisite: MAT 255 and an introductory course in statistics.

An introductory course in statistical theory.

452. Statistical Theory II. 5 hours.

Prerequisite: STA 451.

Continuation of STA 451.

471, 472, 473. (MAT) Introduction to Probability Theory. 3 hours each.

See MAT 471, 472, 473.

490. Special Topics in Statistics. 5 hours; repeatable for maximum 10 hours credit.

Prerequisite: STA 451 or STA 421 and permission of department.

A special topics course for upper division students designed for study in various areas of specialization not specifically covered by other courses.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to

engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

ZOOLOGY (ZOO)

A zoology major is required to take the following courses in addition to the basic B.S. requirements:

- 1) CHM 240 and 240L (or 340 and 340L). CHM 241 and 241L (or 341 and 341L) are also recommended.
- 2) Eight upper-level courses, excluding ZOO 300 and ZOO (ANT/IDS) 307, from the departments of the Division of Biological Sciences or divisional courses. Of these, a minimum of four must be in the Department of Zoology, and four must be lab courses.
- 3) One quarter hour of ZOO 499, Senior Seminar.

A grade of 2.0 or better is required in all prerequisite courses.

212-212L. Human Anatomy. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: BIO 102-102L.

Systematic study of human anatomy at the cellular, tissue, and gross levels.

213-213L. Human Physiology. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: BIO 102-102L and CHM 111 and 111L or equivalent.

Systematic study of the physiology of the human body.

300. Human Genetics and Development. 5 hours.

Prerequisite: BIO 102-102L or permission of department.

A survey of human genetics and prenatal development with emphasis on the causes of birth defects, genetic diseases and the application of modern biological theory to human affairs. Not intended for major credit.

307. (ANT/IDS) Environment and Man. 5 hours.

Prerequisite: BIO 102-102L or 112-112L.

Study of macro-environmental problems currently faced by humans, placing them in historical perspective, and relating them to the natural laws and ecological process which govern the outcome of human-environmental interactions.

312-312L. Anatomical Basis for Medical Physiology.

5 hours. Three lectures and one 3-hour lab period.

Prerequisite: BIO 102-102L, admission to the College of Pharmacy.

Systematic study of human anatomy in preparation for medical physiology courses.

326-326L. Vertebrate Zoology. 5 hours. Three lectures and three 2-hour lab periods.

Prerequisite: BIO 102-102L.

A study of the evolution, structure and function of vertebrate animals.

327-327L. Elementary Physiology. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: BIO 112-112L and CHM 241 and 241L or 341 and 341L or PCS 128-128L or 138-138L.

A comparative study of physiological principles, including evolutionary and ecological factors in animal functions.

345-345L. Marine Biology. 5 hours.

Prerequisite: BIO 102-102L or 112-112L.

The origin and distribution of life in the sea, marine primary and secondary production, with focus on the ecological dynamics of population growth and maintenance in the world's oceans. Comparison of marine biological systems with terrestrial biological systems to elucidate their common or unique physiological and ecological processes.

350-350L. Natural History of Vertebrates. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: ZOO 326-326L or equivalent.

An introduction to local vertebrate fauna with emphasis on behavior, life history, ecology and systematics.

355. Embryology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ZOO 326-326L or equivalent.

An introduction to the development of vertebrates.

402-402L. Protozoology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ZOO 326-326L or equivalent.

A study of the phylum *Protozoa* with emphasis on morphology, physiology, life histories and the role of protozoa in biological research.

403-403L. Mammalogy. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ZOO 326-326L or equivalent.

A study of the taxonomy, distribution, ecology, and evolution of mammals. (Offered alternate years.)

404-404L. Herpetology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ZOO 326-326L or equivalent or permission of department.

The evolution, ecology, behavior, structure and physiology of amphibians and reptiles. (Offered alternate years.)

405-405L. Ichthyology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ZOO 326-326L or equivalent.

A study of the taxonomy, distribution, ecology, and evolution of the marine and freshwater fishes of eastern North America.

406. Ornithology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ZOO 326-326L or equivalent.

An introduction to the study of birds, emphasizing the identification, classification, life histories, and behavior of Georgia species.

407-407L. Invertebrate Zoology I. 5 hours. One lecture and four 2-hour lab periods.

Prerequisite: Permission of department.

The morphology, taxonomy, phylogeny and general biology of the acoelomate and pseudocoelomate phyla.

408-408L. Invertebrate Zoology II. 5 hours. One lecture and four 2-hour lab periods.

Prerequisite: ZOO 407-407L or permission of department.

The morphology, taxonomy, phylogeny and general biology of the coelomate phyla.

411-411L. (MPG) Cytogenetics. 5 hours.

See MPG 411-411L.

422-422L. Neuroendocrinology. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: BIO 380 or ZOO 327-327L.

The physiology of neural and humoral regulatory mechanisms.

424-424L. Ecological Physiology. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: ZOO 327-327L or equivalent or permission of department.

The environmental physiology of animals; osmotic and ionic regulation; temperature regulation; gas exchange.

429. Endocrinology. 5 hours.

Prerequisite: ZOO 326-326L or 327-327L or permission of department.

A general and comparative study of vertebrate endocrinology and the principles of chemical integration, emphasizing the physiology and evolution of regulatory mechanisms and the molecular bases of hormone action.

431-431L. (FRS) Limnology. 5 hours. Three lectures, two 2-hour lab periods, and field trips.

Prerequisite: FRS 330.

Consideration will be given to common organisms found in aquatic habitats associated with forest lands and to the various factors which influence them.

453. (GLY) Vertebrate Paleontology. 5 hours.
See GLY 453.

472-472L. Parasitology. 5 hours. Three lectures and two 2-hour lab periods.
Prerequisite: BIO 102-102L.

A comparative study of internal parasites of man and the lower animals.

482-482L. Animal Histological Techniques. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: ZOO 326-326L (BIO 340 recommended); permission of department.

Practical considerations of contemporary preparative techniques and their application in different light microscope investigations of cells and tissues.

484-484L. Animal Histology. 5 hours. Two lectures and three 2-hour lab periods.

Prerequisite: ZOO 326-326L or equivalent.

A study of the tissues and their organization into organs and organ systems in animals.

485. Problems in Histology. 5 hours. Two lectures and three 2-hour lab periods.

Prerequisite: ZOO 362, 484-484L, or equivalent.

Involves the development of an analytical problem in histology and investigation of the problem with advanced techniques.

486. Ultrastructure of Cells and Tissues. 5 hours.

Prerequisite: BIO 102-102L, 340, ZOO 326-326L or equivalent or permission of department.

A review of electron optical methods applicable to facilitating the interpretation of the fine structural organization of prokaryote and eukaryote cells, tissues and selected organs. Emphasis is placed on the study and inter-

pretation of electron micrographs, literature surveys and discussion.

497ABC. Directed Reading. 5 hours each; combined maximum of 20 hours for ZOO 497ABC and 498ABC.

Prerequisite: Permission of faculty supervisor and department.

Detailed study under the direction of a faculty supervisor of a restricted area of zoology, through reading and discussion of original papers, reviews and monographs with the preparation of critical oral and written evaluations of the material read.

498ABC. Research. 5 hours each; combined maximum of 20 hours for ZOO 497ABC and 498ABC.

Prerequisite: 10 hours of senior division work in biological science and permission of department.

Affords advanced students the opportunity to conduct independent laboratory research under direction of individual staff members.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499. Senior Seminar. 1 hour per quarter; maximum 3 hours.

Prerequisite: Senior class standing and a major in zoology.

Preparation, oral presentation and discussion of reports of original research or of critical surveys of the technical literature under supervision of the departmental faculty. Required of all zoology majors.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

THE COLLEGE OF BUSINESS ADMINISTRATION

&

THE J. M. TULL SCHOOL OF ACCOUNTING

ADMINISTRATIVE OFFICERS

Albert W. Niemi, Jr., A.B., M.A., Ph.D., *Dean*
Robert A. Leitch, B.S., M.S., Ph.D., C.P.A.,
Acting Associate Dean

William R. Boulton, B.A., M.B.A., D.B.A.,
Director of Graduate Programs

Ginabeth B. Dowdy, B.A., M.B.A., *Undergraduate Program Coordinator*

F. George Marable, B.B.A., *Business Manager*

GENERAL INFORMATION

Purpose and Organization

The College of Business Administration intends not only to teach undergraduate and graduate students, but also to conduct a broad program of basic and applied research and to render extensive service to society. The particular task is one of educating persons for the practice of business administration.

Attainment of a broad education requires students to concentrate their first two years in the arts and sciences. The major portion of the remaining two years is focused in a common body of knowledge in business and administration, on top of which the individual will build a specialization.

The fields of specialization include accounting, economics, finance, general business, international business, industrial relations, management, management information systems, management sciences, marketing, organization management, real estate, and risk management and insurance.

Facilities

The College of Business Administration uses all of the facilities of the University, including the Computer Center and other units.

Most of the administrative offices are located in the five-story R. Preston Brooks Hall on the north campus. The majority of

business courses are taught in Caldwell Hall, a new seven-story classroom building adjacent to Brooks Hall.

Accreditation

The College of Business Administration is a member of the American Assembly of Collegiate Schools of Business, the recognized national accrediting association for collegiate schools of business.

Degrees Offered

The College of Business Administration offers the undergraduate degree, Bachelor of Business Administration. The School of Accounting offers a five year course of study leading to a B.B.A./M.Acc. degree.

Several graduate degree programs in business are described in the Graduate School Bulletin, including the Master of Business Administration, Master of Accountancy, and the Master of Arts and Doctor of Philosophy degrees in business-related fields. Joint degree programs in Master of Business Administration-Law and Master of Accountancy-Law are also offered. Prospective candidates may obtain information on these programs by writing the director of graduate studies in business.

Degree Requirements

All students should acquaint themselves with the degree requirements applicable to all students of the University as set down in the General Information section of this bulletin.

In order to qualify for a Bachelor of Business Administration Degree a student must meet the entrance requirements, which may vary from other schools and colleges within the University, be enrolled in one of the major disciplines, and meet all of the degree requirements as set forth by the College of Business Administration.

Hours

A minimum of 195 quarter hours is required for the Bachelor of Business Administration degree.

Transfer Students

Admission standards for transfer students to the College of Business may vary from those standards set by other schools and colleges within the University. Acceptance to the College of Business Administration is tentative upon the student's currently submitted transcript and transfer GPA.

The specific credit for work done at other institutions which will apply toward the Bachelor of Business Administration degree is determined by the dean of the College of Business Administration. The amount of such transfer credit shall not in any case exceed that allowed by the director of admissions of the university. Allowance of transfer credit by the director of admissions does not mean necessarily that all of such credit will be accepted toward a Bachelor of Business Administration degree.

Transfer students whose credits are received in time for evaluation by the Director of Admissions before the beginning of the quarter, should pick up a check-list from the Office of Undergraduate Studies indicating the application of accepted transfer credits toward the Bachelor of Business Administration degree requirements.

Regulations governing transfer students are given in the General Information section.

Honors Program

In September, 1963, the faculty of the College of Business Administration established an honors program, which is now coordinated with the University's Honors Program. Under this program, a student who has the academic qualifications for honors work may carry a full program of such studies through the major part of the junior year. Honors sections are not provided in major courses, for it is believed that normally close working relations with professors at that level makes such action unnecessary.

Admission of students to the Honors Program is by invitation only. Beginning freshmen are admitted on the basis of high school grades and scores on the College Entrance Examination Board Scholastic Aptitude Tests, and on the basis of placement and qualifying examinations administered by the University. For all other students, grades made at the University determine admission to the pro-

gram. To be admitted to the program and to remain in it, a student should have a cumulative scholastic average of 3.5 and obtain approval of the College.

Honors courses available in the College of Business Administration include: Principles of Accounting I and II (ACC 112H and 113H); The Legal Environment of Business (BL 280H); Principles of Economics I and II (ECN 115H and 116H); Economic Development of the United States (ECN 143H); Introduction to Computers in Business (MS 219H); Statistical Analysis for Business (MS 322H); Labor Economics (ECN 396H); Money and Banking (FIN 336H); Business Finance (FIN 337H); Principles of Organization and Management (MAN 362H); and Principles of Marketing (MKT 369H); Honors Thesis, various departments.

Academic Advisors

Academic advisement in the College is coordinated by the Undergraduate Program Coordinator. Students are advised by the faculty of their major department. Each major department has a coordinator of advisors who is responsible for supervising the overall advisement program in his/her particular department.

Residence

A minimum of 90 quarter hours must be taken in residence at the University. Business administration students, however, must take at least 45 hours of senior division business courses in residence, including at least 25 hours in a major field and 5 hours of business policy.

Grades

Grades of 2.0 or better are required for ENG 101, ENG 101 and 102 combined, major courses (30 hours) and Business Policy 599.

BACHELOR OF BUSINESS ADMINISTRATION DEGREE REQUIREMENTS

Core Curriculum

For general information on the core curriculum, see the General Information section of this bulletin, under the listing *The Core Curriculum*.

	HOURS	
AREA I HUMANITIES	20	
ENG 101, 102	10	
From the following:	10	
CML 221, 222; ENG 231G, 232G, 233G; Foreign Language (103 and above); CLC 120, 121, 150; Philosophy; Religion; Drama; Music and Art		
AREA II MATHEMATICS AND NATURAL SCIENCE	20	
MAT 103 and 207	10	
Laboratory Science (any 10-hour sequence from the following):	10	
AST 107-107L, 108-108L; BIO 101-101L, 102-102L; BOT 121-121L, 122-122L; CHM 111 and 111L, 112 and 112L or CHM 121 and 121L, 122 and 122L; PCS 127-127L, 128-128L or 229-229L or PCS 137-137L, 138-138L or 239-239L; GLY 115-115L, 116-116L or GLY 125-125L, 126-126L; GGY 120-120L, 121-121L, 122-122L		
AREA III SOCIAL SCIENCES	20	
POL 101	5	
HIS 111, 112, 121, 122, 251, 252	5	
PSY 101	5	
SOC 105	5	
AREA IV COURSES RELATED TO MAJOR	30	
ACC 110, 111	10	
ECN 105, 106	10	
MS 209	5	
MAN 201 or 202	5	

Required Curriculum

Freshman and Sophomore Years

	RECOMMENDED HOURS QTR.	
Behavioral and Communications Sequence		
ENG 101 (Grade C or better required)	5	1
ENG 102 (average of 2.0 required in ENG 101 and 102 combined)	5	2
SOC 105	5	2
PSY 101	5	3
MAN 201, 202	5	3-4
Environmental Sequence		
POL 101	5	1
HIS (111, 112, 121, 122, 251 or 252)	5	3
ECN 105, 106	10	4-5
BL 270-270L	5	6

Quantitative Sequence		
MAT 103	5	2-3
ACC 110, 111	10	4-5
MS 209	5	5
MAT 207	5	4
MS 312	5	6
General		
Laboratory Science, sequence of two selected from the following: AST 107-107L, 108-108L; BIO 101-101L, 102-102L; BOT 121-121L, 122-122L; CHM 111 and 111L, 112 and 112L; CHM 121 and 121L, 122 and 122L; GGY 120-120L, 121-121L, 122-122L; GLY 115-115L, 116-116L; GLY 125-125L, 126-126L; PCS 127-127L, 128-128L		
Humanities, any two of the following: CML 221, 222; ENG 231G, 232G, 233G; Foreign Language (103 and above); CLC 120, 121, 150; Philosophy; Religion; Music; Art; Drama	10	1-2
PEB 100-165	5	5-7 1-5

Junior and Senior Years

(Forty-five hours of senior division business courses must be taken in residence including at least 25 hours of major courses and 5 hours for MAN 599.)

FIN 330	5	7
MAN 351	5	7
MAN 320	5	8
MKT 360	5	8
Environmental Electives	15	8-10
Five hours from		
Group A: ECN 133, 134, 386, 406, 437, 448, FIN 326 or 434		
Five hours from		
Group B: BL 370, 576, INS 381, 506, MAN 401, 540, MKT 558, 559, RE 390 or 509		
Five hours optional elective from A or B		
Major Concentration	30	8-12
Business Policy 599	5	12
(May be taken from any offering department)		
Non-Business Electives	10	9-10
(May be selected from any		

course outside the College of Business Administration. Appropriate course prerequisites must be met)		
Free Electives	10	11-12
(May be selected from any school or college of the University)		
Total Minimum Hours		195

(Credit for ENG 100 earned Summer 1983 or later may not count in this total.)

Other Requirements

Students seeking the B.B.A. degree as a condition of graduation must offer a passing score on the University System Regents' Test, explained in the General Information section of this bulletin.

Students will not receive credit for senior division work (courses numbered 300 or above) until the English 101 and 102 course requirement is satisfactorily completed. Junior status is required for all senior division (300 level or above) courses, except MS 312.

Foundation courses, particularly those in the quantitative stream, must be completed first if students are to benefit most from professional business administration courses. Accordingly, before enrolling in major courses for degree credit, students must have completed 90 hours including ACC 111 and MS 312. ACC 111 and/or MS 312 may be taken concurrently with the first major course(s).

Substitutions for major courses must be approved in advance and in writing by the student's major advisor. These substitutions must be numbered 300 or above.

MAJORS

Accounting (ACC)

The major in accounting is designed to give the student an understanding of the theory of accounting as it is used in our society. A student may concentrate in courses leading to a private, public, or governmental accounting career.

Accounting education also provides an excellent background for non-business professions such as law, and is sound basis for advancement to top level management positions.

Required courses for all majors in accounting:

	HOURS
ACC 500 Financial Accounting I	5
ACC 501 Financial Accounting II	5
ACC 502 Financial Accounting III	5
ACC 510 Managerial I	5
ACC 540 Tax I	5
The J. M. Tull School of Accounting offers other upper division courses for those wishing to acquire specialized training in accounting. Students may select additional courses from those listed below after consultation with their advisor.	
ACC 520 Auditing I	5
ACC 530 Systems I	5
ACC 541 Tax II	5
ACC 542 Tax III	5
ACC 590 Public Sector I	5

Management Information Systems

In modern business enterprise, accurate and timely information is necessary in all phases of operations. With the advent of the electronic computer, management information systems have assumed a vital role in business, commerce, and industry. Correspondingly, the demand for business-related education in this field has increased greatly. The Management Information Systems (MIS) program, offered through the Department of Management, is designed to meet this need.

MIS brings together, into one program, the knowledge necessary to be an MIS professional. This knowledge includes: the common body of business knowledge, programming skills in a variety of languages, management information systems, file organization and data base management systems, systems analysis and design, decision support systems, office automation, mini-, micro-, and main-frame computers, and information resource management.

The major course program (total 30 hours) consists of four required courses (20 hours) and two electives (10 hours). Program details are available in the Department of Management offices in Brooks Hall.

Economics (ECN)

Students may major in economics in either the College of Business Administration or the Franklin College of Arts and Sciences.

An understanding of the economic realities is essential to the effective management of both private and public enterprise. Leaders in these areas must have an appreciation of the significance of general economic developments for the decisions that they make. Only

through intelligent planning and coordination based upon an understanding of fundamental economic relationships can our nation adequately fulfill its responsibilities both at home and abroad. The program of training in economics is an outgrowth of this basic need.

Students majoring in economics in the College of Business Administration take 30 hours of economics major courses numbered 300 or above.

	HOURS
Required for all economics majors:	
ECN 405 Intermediate Micro-Economic Theory	5
ECN 406 Intermediate Macro-Economic Theory	5
Note: Neither course is a prerequisite to the other.	
In addition, economics majors complete 20 hours (four courses) which they may choose from the following list:	
FIN 326 Money and Banking	5
ECN (MAN) 341 Environment of International Business	5
ECN 386 Labor Economics	5
ECN 402 Economics of Natural and Environmental Resources	5
ECN 410 Economic Growth and Development	5
FIN 434 Public Finance	5
FIN 435 State and Local Public Finance	5
ECN 437 Comparative Economic Systems	5
ECN 447 The Economics of Industrial Organization	5
ECN 448 Public Utilities, Regulation, and Enterprise	5
ECN 449 Economic Analysis of Law	5
FIN 450 Monetary Policy	5
ECN 480 International Trade: Theory and Policy	5
FIN 481 International Finance: Theory and Policy	5
ECN 495 Economics of Population	5
ECN 496 Managerial Economics	5
ECN 499 Quantitative Analysis for Economists	5

No more than two of the following courses:	
ECN 489 The Labor Movement	5
ECN (MAN) 490 Labor Legislation	5
ECN (MAN) 491 Collective Bargaining	5
ECN 493 Industrial Relations Systems	5
ECN 494 Labor Market Analysis	5

Banking and Finance (FIN)

The strength of any company or institution is based on its financial well-being. As such, financial planning and control are of utmost importance in any business. Financial execu-

tives have the exciting yet extremely challenging job of evaluating and managing the finances of a company or institution, making financial projections, and determining the best strategies to enhance growth and profitability.

The major in finance has been designed to provide the student with the concepts and techniques of financial analysis. Through the use of accounting information and the basic understanding of finance theory, finance students are taught how to arrive at financial decisions for a particular company or institution and how to make financial projections in the business world. The finance program combines coursework concentrating on financial management, investment analysis, and financial markets to prepare students for positions with major corporations, smaller business enterprises, stock brokerage firms, government agencies, commercial banks, investment banks, insurance companies, or other financial institutions.

There are three major areas of concentration in the finance program of study: financial management (or corporate finance), investments and security analysis, and commercial banking and institutional finance.

Required for all banking and finance majors:	
	HOURS
FIN 326 Money and Banking	5

Note: FIN 326 is required for all finance majors and should be taken prior to or concurrently with a student's first major (400-level) course. Because FIN 326 is not a 400-level course it is not acceptable for major area credit but may be used in either the environmental elective area or the free elective area (see the BBA required curriculum for the junior and senior years). In addition, banking and finance majors must complete 30 hours of finance major courses numbered 400 or above. These major courses should be chosen from the following list:

FIN 430 Long-Term Financial Decisions	5
FIN 431 Survey of Investments	5
FIN 432 Portfolio and Capital Market Theory	5
FIN 434 Public Finance	5
FIN 435 State and Local Public Finance	5
FIN 439 Essentials of Working Capital Management	5
FIN 450 Monetary Policy	5
FIN 451 Commercial Banking	5
FIN 452 The American Financial System	5

FIN 481 International Finance:	
Theory and Policy	5
FIN (AEC) 487 Commodity Markets	5
FIN 488 Security Analysis	5

With the aid of the finance advisor, students interested in problems of governmental finance can take a specially designed major to fit their interests.

Students are also encouraged to take FIN 340, Internship and/or Cooperative Education, 1-15 hours, between their junior and senior years. This course is available for elective credit only.

General Business

This major is designed for students who wish to obtain a general training in business administration. It is especially appropriate for those who will eventually become owners or managers of small business concerns.

With the assistance of their advisor, students may plan their own program of study in general business provided that no more than two major courses from any one department may be used.

International Business

A growing number of large and small U.S. companies transact a significant and continually expanding portion of their business through international channels. In the future, business administration graduates will be increasingly involved with the international problems of modern business. The great majority of multinational companies are headquartered in the United States and are contributing importantly to this nation's status as the world's leading trader, international investor, and lender. Meeting the many challenges implicit in this situation requires special knowledge and skills of personnel engaged in the planning and administration of both business enterprises and governmental organizations with overseas relationships.

This program provides opportunities for students to gain the knowledge and skills required for international business careers while at the same time, assisting them in developing an understanding of the mechanisms and institutions of the international economy. It is designed for students desiring to pursue management careers with domestic firms participating in or affected by international business.

Required Courses:	HOURS
ECN 480 International Trade: Theory and Policy	5
MKT 558 International Marketing	5
FIN 481 International Finance: Theory and Policy	5
MAN 552 International Business Policy: Principles and Cases	5

Major elective courses (two of the following or area study):

ECN 410 Economic Growth and Development	5
ECN 437 Comparative Economic Systems	5
ECN 493 Industrial Relations Systems	5
GGY 358 Economic Geography	5
ANT 405 Cultural Anthropology	5
Area Study (in lieu of major electives with advisor's approval). Students may select two courses dealing with a specific geographical region for concentration; e.g., Latin America, Africa, Asia or Europe, and may take these courses in one or more departments of the University; e.g., geography, anthropology, or political science.	10

Students are urged, but not required, to supplement their background for effective participation in international business by studying one or more foreign language(s). No major credit is given for language study, although students earn general University credit.

Students may earn credit in foreign study programs, business economics, or other areas with approval of their major advisor.

Industrial Relations

The labor relations-personnel management option is broadly oriented. It encompasses labor relations and personnel management courses and provides an essential background for managers dealing in labor relations, personnel administration, or line management where effective selection, training, supervision, and motivation of employees is an essential of success.

This program also includes courses in labor market analysis, the economics of manpower utilization and industrial relations systems that are needed for analysis and policy determination in the labor sector of the economy.

Many of the principles and issues studied are urgent matters of public concern. Hence, study in the field provides information for responsible citizenship as well as training for future employment.

The program is jointly offered by the

economics and management departments.

Students will take one required and two selected courses from each field as outlined below (other courses may be substituted for the required and optional courses with permission of the advisor).

<i>Personnel Management</i>	HOURS
Required: MAN 585 Personnel/Human Resource Management	5
Select two:	
MAN (PSY) 582 Personnel Program Development	5
MAN (PSY) 586 Compensation Administration	5
MAN (PSY) 588 Personnel Selection and Placement	5
MAN 594 Human Resource Planning and Development	5
MAN 595 Administrative Practices	5
<i>Labor Relations:</i>	
Required: ECN 386 Labor Economics	5
Select two:	
ECN (MAN) 341 Environment of International Business	5
ECN 480 International Trade: Theory and Policy	5
ECN 489 The Labor Movement	5
ECN (MAN) 490 Labor Legislation	5
ECN (MAN) 491 Collective Bargaining	5
ECN 493 Industrial Relations Systems	5
ECN 494 Labor Market Analysis	5

Management (MAN)

The essence of business operation is the combining of resources of all kinds into an effective going concern. Because that task is as complex as it is challenging and fascinating, this program of study recognizes that careers in management will normally be fashioned by a long process of development on the job. Training is designed primarily to provide the student with tools which will both facilitate on-the-job development and make certain that this learning will be solidly grounded. The focus of attention will be on principles and on the making of decisions in real-life situations. All students will elect a concentration or specialization area around which to shape their major program. Areas of concentration or specialization for management majors include: business systems/management information systems; general management; personnel/human resource management; production/operations management; and small business management/entrepreneurship.

Students are aided in deciding upon their area of concentration by use of the depart-

ment's Program of Study Manual. Students will work out the details of their program with their advisor from the offerings of the department and such other courses as may seem appropriate for their special needs.

Students may with permission of the department take MAN 340, Internship and/or Cooperative Education, for elective credit.

Management Sciences (MS)

Management Sciences (MS) represents the application of computers, mathematical methods, and statistics within a business environment as an aid to managerial decision-making. Increasing use of management sciences to assist managerial decision-making has occurred because mathematical models and statistical techniques have been developed that realistically model organizational activities. Examples are prevalent in all functional areas of business. For example, mathematical models have been developed for inventory control (Production Management), media allocation and market segmentation (Marketing), personnel assignment (Personnel Management), portfolio analysis (Finance), agency valuation and risk analysis (Insurance), and accounts receivable and cash flow management (Accounting).

Since quantitative tools and approaches to problem solving are meaningful only if an individual has a sound comprehension of the areas in which the tools can be applied, each Management Sciences major will be expected to take a number of courses in the functional areas of business (e.g., finance, marketing, management, accounting). The key objective of the major thus is to provide an introduction to the basic methodologies of the management sciences in conjunction with a well-rounded undergraduate program in business.

An additional objective of the MS undergraduate program is to prepare students to pursue advanced work in management sciences after graduation, either through continuing education while on the job or through graduate work.

Preliminary Requirements:

Management Sciences majors are required to complete the calculus sequence through MAT 254 or the equivalent. Also, students are strongly encouraged to take MS 219H in lieu of MS 209 and MS 322H in lieu of MS 312 in order to receive a strong foundation for the major courses.

Core Course Requirements:

All management sciences majors are required to take one course in each of the areas

of operations research, computer methods, and simulation. The core courses are:

	HOURS
MS 500 Survey of Operations Research	5
MS 505 Introduction to Simulation	5
MS 535 Computer Methods in Management Science	5

An additional 15 hours of coursework to complete the 30-hour major requirement may be selected from the following courses, if prerequisites have been met:

	HOURS
<i>Management Science</i>	
MS 512 Sampling Methodology for Business	5
MS 519 Application of Small Computers in Management Science	5
MS 532 Business Forecasting Methods	5
MS 539 Introduction to Data Base Models in Business	5
MS 552 Applied Regression Analysis	5
MS 597 Special Topics in Management Science	5
<i>Statistics</i>	
STA 422 Statistical Methods II	5
STA 451 Statistical Theory I	5
STA 452 Statistical Theory II	5
<i>Mathematics</i>	
MAT 255 Calculus	5
MAT 256 Introduction to Linear Algebra	5
MAT 358 Introduction to Differential Equations	5
<i>Computer Science</i>	
CSC 302 Assembler Language Programming	5
CSC 303 Data Structures	5
CSC 437 Data Base Management I	3
CSC 438 Data Base Management II	3
CSC 503 Commercial Data Processing	5
<i>Accounting</i>	
ACC 510 Managerial I	5
ACC 530 Systems I	5

Marketing (MKT)

Marketing is concerned with developing and selling the vast assortment of products needed to satisfy the diverse wants and wishes of consumers. It is an indispensable part of business practice and a challenging field for study and research.

The purpose of the major in marketing is to give students a basic understanding of marketing and its role in society. The marketing curriculum is future oriented—emphasizing the skills needed for successful and responsible careers in advertising, retailing, sales management, wholesaling, research, physical distribution, product management, and related areas. The curriculum is designed to develop the broad background of knowl-

edge required for continuing professional growth in a changing world that is constantly demanding better trained people for executive positions.

All marketing students are required to take a core of courses devoted to the development of analytical skills. These required courses draw upon both the behavioral and quantitative sciences and are designed to help students gain an understanding of the analytical methods and research procedures used in identifying and solving marketing problems.

Required courses for all marketing students:

	HOURS
MKT 465 Marketing Research and Analysis	5
MKT (PSY) 561 Behavioral Theory and Marketing*	5
MKT 571 Marketing Strategy	5

In addition to the required courses, each student majoring in marketing chooses a set of elective courses to represent an area of specialization, depending upon his or her particular interests and career objectives. This part of the instructional program emphasizes problem solving, decision making, and communications. The courses offer opportunities for students to apply analytical techniques in solving practical marketing problems. These courses are intended to give students sufficient depth of knowledge to recognize and search for answers to problems and to apply the solutions that are derived. Electronic computers are used wherever possible for analytical assignments.

Specialized study is available in advertising and sales promotion, retailing, sales and sales management, and transportation and physical distribution. Each student should consult with a faculty advisor before choosing a set of electives.

Elective courses in marketing are:

MKT 475 Marketing Decision-Making Techniques	5
MKT 542 Carrier Management	5
MKT 543 Current Transportation Issues	5
MKT 558 International Marketing	5
MKT 559 Principles of Transportation	5
MKT 560 Principles of Retailing	5
MKT 562 Personal Selling	5
MKT 563 Advertising	5
MKT 564 Sales Management	5

*Students specializing in transportation and physical distribution should substitute MKT 559, Principles of Transportation, for MKT (PSY) 561, Behavioral Theory and Marketing

MKT 565 Retail Administration and Policy	5
MKT 567 Marketing Promotion: Personal and Non-Personal Selling	5
MKT 569 Physical Distribution	5
MKT 584 Product Planning	5

Advanced marketing students, within 55 hours of graduation, may obtain practical experience and enrich their educational program by enrolling in MKT 340, Internship and/or Cooperative Education. Up to 15 hours of elective credit may be earned for this course.

Organization Management

The work of organization management lies in the mobilization and coordination of volunteer community efforts by participating business firms and related interested agencies. This curriculum is aimed at preparing young men and women for careers in the wide array of activities associated with chambers of commerce and trade associations. This rapidly growing field requires imaginative and creative business leadership, political sensitivity, and basic grounding in the processes of economic development. The broad curriculum designated below is designed to provide the tools that the educator in the field of organization management must understand and use.

Major courses (30 quarter hours) will be selected from among the following:

<i>Business Administration</i>	HOURS
Data Processing (exact course to be determined)	
MAN 540 Business and Society	5
MAN 585 Personnel/Human Resource Management	5
MAN 595 Administrative Practices	5
MAN (SPC) 596 Organizational Communication	5
MKT 567 Marketing Promotion: Personal and Non-Personal Selling	5
<i>Economics</i>	
ECN 410 Economic Growth and Development	5
ECN 447 The Economics of Industrial Organization	5
ECN 489 The Labor Movement	5
ECN (MAN) 490 Labor Legislation	5
ECN (MAN) 491 Collective Bargaining	5

Senior division electives of 10 quarter hours will be selected from among the following courses:

<i>Political Science</i>	
POL 406 Theory of Political Organization	5
POL 413 Government and Interest Groups	5
POL 468 Federalism	5

<i>Sociology</i>	
SOC 480 Industrial Sociology	5
SOC 409 Social Change	5
SOC 435 The Community	5

<i>Psychology</i>	
PSY 371 Applied Psychology of Self-Management and Actualization	5
PSY 373 Social Psychology	5

<i>Journalism</i>	
JRL 311 Advertising Copy Writing	5
JRL 385 Public Relations	5

<i>Speech</i>	
SPC 350 Argumentation and Debate	5

Real Estate (RE)

The real estate program is designed to provide training for all business students in the unique problems associated with making real estate decisions for personal or business situations, including where to locate, whether to buy or lease, whether to use equity or borrowed funds, whether to use existing or new facilities or whether to use one or more installations. Basic to all of these investment decisions is the valuation of real property, which requires an understanding of real estate markets, as well as the investment process. These decisions are made in a unique environment in which the buildings are durable and fixed in location and in which the government influence is not just taxation, but includes the myriad of zoning and development regulations, licensing, and financial regulations.

Majors are trained for careers in real estate management, brokerage, appraisal, or mortgage finance.

Required Courses:	HOURS
RE 390 Urban Land Principles	5
RE 508 Principles of Valuation	5
RE 509 Real Estate Investment	5
RE (FIN) 510 Real Estate Finance	5

Two additional courses must be selected from the following list:

RE 391 Real Estate Brokerage	5
RE 392 Real Estate Management	5
RE (BL) 511 Real Estate Law	5
RE (ECN) 512 Urban and Regional Development	5
RE 520 Housing Markets	5
RE 590 Problems in Real Estate	5
FIN 430 Long-Term Financial Decisions	5

FIN 431 Survey of Investments	5
FIN 452 The American Financial System	5

Students are also encouraged to take RE 340, Internship and/or Cooperative Education, 1-15 hours, during the summer between their junior and senior years. This course is available for elective credit only.

Risk Management and Insurance (INS)

Risk Management and Insurance has assumed the status of a profession, and the risk management and insurance program of study is designed to enable the student to achieve professional competency as well as become a more intelligent purchaser of insurance. The risk management and insurance major is designed to provide students with both a broad understanding of the place and functions of risk-bearing institutions in a private economy and an opportunity for professional advancement in the risk management and insurance field.

The risk management and insurance major can be made more meaningful by supplementing the coursework with parallel work experience. Superior students within 55 hours of graduation are encouraged to take INS 340, Internship and/or Cooperative Education, for elective credit. Students interested in INS 340 should ask their advisor for further information.

All risk management and insurance majors are required to take the following courses:

	HOURS
INS 381 Principles of Risk and Insurance	5
INS 385 Commercial Lines Insurance	5
INS 513 Business Risk Management	5

In addition each student must take one course in the pensions or life insurance area. The eligible pension and life insurance courses are:

INS 387 Life Insurance	5
INS 504 Life Insurance Law and Reserve Calculations	5
INS 505 Business Life Insurance	5
INS 511 Pension Planning and Employee Benefits	5

Each student must have a total of six major courses, including completion of one of the following areas of specialization:

Risk Management Sequence

INS 502 Casualty Insurance Problems	5
INS 503 Property Insurance Problems	5
INS 511 Pension Planning and Employee Benefits	5

Property-Liability Sequence

INS 502 Casualty Insurance Problems	5
INS 503 Property Insurance Problems	5
INS 507 Insurance Agency Management	5

Life and Health Sequence

INS 387 Life Insurance	5
INS 504 Life Insurance Law and Reserve Calculations	5
INS 505 Business Life Insurance	5
INS 506 Social Insurance	5
INS 511 Pension Planning and Employee Benefits	5

COMBINED MAJOR PROGRAMS

Business Administration/Industrial Geography

In cooperation with the College of Arts and Sciences, the College of Business Administration offers a major in industrial geography which trains students in the fundamentals of economics, geography, and allied fields upon which the expanding field of area planning is based. Its purpose is to provide the background requisite for careers with city, county, metropolitan, and regional planning commissions; private consultative planning and real property development firms; industries concerned with urban-industrial developmental problems—such as railroads; market analysis consultants; and commercial and governmental mapping agencies. This curriculum also provides a superior basis for graduate work in area planning or economic geography.

Freshman and Sophomore Years

	HOURS
Requirements as outlined for the B.B.A. degree, with the exception that GGY 120-120L, 121-121L, and 122-122L must be taken in the laboratory science category and GGY 101 and 102 may be taken in lieu of SOC 105 and PSY 101.	106

Junior and Senior Years

FIN 330	5
MAN 320 and 351	10
MKT 360	5
Environmental Electives (10 hours)	
Group A: ECN 133, 134, 386, 406, 437, 448; FIN 326 or 434	5
Group B: BL 370, 576; INS 381, 506; MAN 401, 540; MKT 558, 559; RE 390 or RE (ECN) 512	5
GGY 350, 358, 459, 460 and 463	25

Three courses from the following group:

GGY 410, 420, 436, 461, 426 (4 hrs.),
468 14-15

Four courses from the following group:

ECN 449, 495; RE 390, RE (ECN) 512;
MKT 465, 542, 543, 558, 559, 569 20

Business Policy 599 5

200-201

Bachelor of Arts (Economics)

When students who are working toward the Bachelor of Arts degree enter their junior year, they are required to elect a major division in which to concentrate and from which they must take at least eight courses. One of the major divisions that may be selected is the social sciences, and economics is one of the departments within this division. The economics concentration group is provided for A.B. students who desire to major in economics. From this group, the student's major program will be arranged, subject to the approval of the major professor and the dean of the College of Arts and Sciences.

SPECIAL SERVICES AND INSTITUTES

Division of Research

The division serves the state by bringing the resources of the college to bear on economic growth and development problems in Georgia and the Southeast. The division carries out its research objectives by providing a current collection of business and economic reference materials, by helping faculty members develop proposals and obtain grants, and providing editorial and administrative support to faculty conducting business and economic research.

The division publishes a bi-monthly magazine, *Georgia Business*; a series of faculty research papers, and monographs; the *Georgia Statistical Abstract*; a series of monographs on the Georgia economy and a series of travel research studies. The division also houses the Center for Regional Studies and the Georgia Economic Forecasting Project. The center is primarily concerned with analyzing economic growth and related issues in the Georgia and southeastern economies. The Forecasting Project makes projections of Georgia future economic growth.

The division is a member of the Association for University Business and Economic Research and Southeast Economic Analysis Conference.

COURSES OF INSTRUCTION

General Prerequisites

All students, both business and non-business, must meet general College of Business Administration prerequisite requirements for upper division business courses, in addition to the specific course prerequisites cited in the course descriptions. General prerequisites for MAN 351, MKT 360, and FIN 330 are the completion of ENG 101 and 102 and 90 hours. General prerequisites for all other upper division business courses, except MS 312, are the completion of ENG 101 and 102, 90 hours, MS 312 or equivalent, and ACC 111 or equivalent.

J. M. Tull SCHOOL OF ACCOUNTING (ACC)

110. Principles of Accounting I. 5 hours.

A study of fundamental principles applicable to the accounting cycle, asset valuation, income determination, financial reporting, basic business taxes, and owner's equity.

111. Principles of Accounting II. 5 hours.

Prerequisite: ACC 110.

Accounting principles and basic accounting theories as an aid to management. Cost accounting fundamentals. Analysis and interpretation of financial statements.

112H. Principles of Accounting I (Honors). 5 hours.

Not open to students with credit for ACC 110. Underlying accounting concepts and standards utilized to communicate information essential to understanding the activities of an enterprise, including financial analysis, valuation and measurement, planning and control.

113H. Principles of Accounting II (Honors). 5 hours.

Not open to students with credit for ACC 111. A continuation of 112H.

116. Survey of Accounting. 5 hours.

Not open to Business Administration students. A general survey of accounting with emphasis on the preparation, analysis, and interpretation of financial statements. A non-technical approach is taken in this study of accounting concepts and standards underlying financial reporting and their relevance to the public, private, and governmental segments of society.

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

310. Management Accounting. 5 hours.

Not open to accounting majors.

Prerequisite: ACC 111 or 116.

The uses of accounting data by management in planning, budgeting and forecasting.

440. Principles of Taxation for Non-Accounting Majors. 5 hours.

An introduction to Federal tax principles as they apply to individuals, corporations, partnerships, estates, and trusts.

499H. Honors Thesis. 5 hours.

Prerequisite: Good academic standing (general and honors). Senior division standing or Junior Division Honors Certificate. Furthermore, a student should have at least 10 hours of senior division credit in the subject of his/her proposed thesis.

This course provides opportunity for Honors students to undertake individual research under the guidance of a thesis director who would be his/her major professor or some other professor approved by the major professor leading to an Honors Thesis.

500. Financial Accounting I. 5 hours.

Prerequisite: ACC 111 or 113H, and grades of at least 2.0 in each of ACC 110 and 111.

The financial accounting sequence is designed to be a rigorous study of current technical practices and theory. Covers theoretical foundations, the accounting process, income determination, preparation of financial statements and accounting for current assets. There is a heavy emphasis on theoretical arguments supporting current accounting practice and alternatives.

501. Financial Accounting II. 5 hours.

Prerequisite: ACC 500.

A continuation of ACC 500 covering the theory and practice of accounting for liabilities, owners' equity and earnings per share.

502. Financial Accounting III. 5 hours.

Prerequisite: ACC 501.

A continuation of ACC 501 covering the theory and practice of accounting for accounting changes and errors, income taxes, pension plans, leases and other topics.

510. Managerial I. 5 hours.

Prerequisite: ACC 110 and 111.

Emphasis is upon utilization of cost data in planning and controlling activities. Internal and external data are woven into the planning models. Specific areas are: process, job order, standard, functional relationships, and budgeting.

520. Auditing I. 5 hours.

Prerequisite: ACC 530 and MS 312.

An in-depth review of the profession's auditing standards and of the steps involved in (1) planning the audit, (2) reviewing the system of internal control, (3) performing substantive auditing procedures, and (4) writing audit reports. Emphasis is placed on statistical sampling and auditing computerized systems. An overview of SEC regulations is provided.

530. Systems I. 5 hours.

Prerequisite: MS 209 and ACC 111 or 113H, and permission of department.

This course is designed to expose students to electronic data processing, COBOL programming, file maintenance data structure, transactions flow, systems analysis, and systems control.

540. Tax I. 5 hours.

Prerequisite: ACC 111 or 113H.

A basic Federal income tax course, involving a study of history and background, general concepts of taxation, income, deductions, and federal income taxation primarily relating to individuals. This course is designed for accounting majors to emphasize the application of technical rules to factual situations such as those typically encountered by an accountant.

541. Tax II. 5 hours.

Prerequisite: ACC 540.

A continuation of ACC 540. Includes the study of income tax laws applicable to corporations, subchapter S corporations, partnerships, estates, trusts, and an introduction to social security taxes and estate and gift taxes, and tax research methodology.

542. Tax III. 5 hours.

Prerequisite: ACC 540.

Selected sections of the Internal Revenue code, primarily dealing with corporations, are used to emphasize tax planning and research. Limited treatment of estate planning is given.

580. Internship and/or Cooperative Education. 1-15 hours.

Prerequisite: Permission of department.

Students are permitted to enter business establishments, accounting firms, and governmental agencies for the purpose of obtaining practical and applied business and professional experience. A paper describing and analyzing this experience is required. (School Approval Required)

590. Public Sector I. 5 hours.

Prerequisite: ACC 502.

Accounting problems and procedures pertain-

ing to state and local governments and their institutions; governmental classification of receipts and expenditures; preparation of reports; budgeting and fund accounting.

BANKING AND FINANCE (FIN)

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

326. Money and Banking. 5 hours.

Prerequisite: ECN 105 or permission of department.

Money in the economic organization; monetary theory; methods of stabilizing the price level; theories of bank deposits; discount policy and the interest rate of central banks regulation of credit.

330. Financial Management. 5 hours.

Prerequisite: ACC 110.

A study of the basic concepts and analytical tools necessary to understand and engage in the financial decision-making process. Specific topics include financial statement analysis, working capital management, valuation theory, capital budgeting, cost of capital, dividend policy, and long-term financing.

336H. Money and Banking (Honors). 5 hours.

Not open to students with credit for FIN 326. Money in the economic organization; monetary theory; methods of stabilizing the price level; theories of bank deposits; discount policy and the interest rate of central banks regulation of credit.

337H. Business Finance (Honors). 5 hours.

Not open to students with credit for FIN 330. Prerequisite: ACC 110.

This course is designed to acquaint the student with the analytical tools of finance. The honors course emphasizes analysis as opposed to description.

340. Internship and/or Cooperative Education. 1-15 hours.

Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required. (Department Approval Required)

430. Long-Term Financial Decisions. 5 hours.

Prerequisite: FIN 330.

The economic analysis of long-term capital investment decisions including the financing of long-term investment projects. Specific topics include capital budgeting under certainty, risk

and uncertainty, cost of capital and financial structure, and the dividend decision.

431. Survey of Investments. 5 hours.

Fundamentals of the securities markets, investor objectives, introduction to analytical techniques and an examination of investment alternatives.

432. Portfolio and Capital Market Theory. 5 hours.

Prerequisite: FIN 330 or permission of department.

Analysis of alternative approaches to management of common stock and fixed income portfolios. Analytical introduction to the principles of investing focused primarily on portfolio theory utilizing financial valuation concepts and capital market theory.

434. Public Finance. 5 hours.

A general consideration to American public expenditures, revenues, and fiscal administration.

435. State and Local Public Finance. 5 hours.

Revenues, expenditures, and fiscal administration of Georgia and its political subdivisions; fiscal comparisons of Georgia with other states, and an analysis of intergovernmental tax relationships.

439. Essentials of Working Capital Management. 5 hours.

Prerequisite: FIN 330.

The essentials of working capital management are presented. Cash management, credit policy, inventory policy and current liability management are studied within a value maximizing framework.

450. Monetary Policy. 5 hours.

Prerequisite: FIN 326.

Monetary theory and how it affects monetary policy; objectives; techniques, and problems involved; Treasury fiscal and debt management policies as they affect and are affected by Federal Reserve policy.

451. Commercial Banking. 5 hours.

Prerequisite: FIN 326.

The theory of commercial banking; and the concept of bank asset management; the relationship of asset management to liquidity; commercial banking and the nation's credit structure.

452. The American Financial System. 5 hours.

The function, role, and management of the major types of financial institutions in the United States. Emphasis is on the flow of funds through the specialized financial market sectors.

481. International Finance: Theory and Policy. 5 hours.

Balance of payments analysis, international equilibrium and the mechanism of adjustment, international money markets and monetary standards, capital movements and the objectives of international monetary policy and international corporate finance.

487. (AEC) Commodity Markets. 5 hours.

See AEC 487.

488. Security Analysis. 5 hours.

Prerequisite: FIN 330 or permission of department.

Analysis of determinants of individual common stock value, statement analysis, predictive methodology and financial modeling.

510. (RE) Real Estate Finance. 5 hours.

See RE 510.

599. Business Policy—Finance. 5 hours.

Prerequisite: Senior standing.

This course seeks to integrate the concepts, techniques, and knowledge of all areas of business administration. Problems of setting policies which enable firms to accomplish their objectives are studied. This course is designed for final quarter seniors.

BUSINESS LAW (BL)

270-270L. The Legal Environment of Business.

5 hours. 2 hours lecture, 3 hours discussion.

Jurisprudence, the legal process, regulation of competition, consumerism. A study of patterns and processes of legal regulation.

280H. The Legal Environment of Business (Honors). 5 hours.

Not open to students with credit for BL 270-270L.

An honors study of the principles, trends, and processes of legal influences and regulation upon business. Jurisprudence, the legal process, regulation of competition, consumerism.

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

370. Business Law I. 5 hours.

Provides a basic appreciation of the relationships of law and society and the fundamental concepts encompassed by law as well as an investigation of contracts, Uniform Commercial Code sales and Antitrust Law.

511. (RE) Real Estate Law. 5 hours.

See RE 511.

576. Business Law II. 5 hours.

Prerequisite: BL 370 or permission of department.

Business organization, property, bankruptcy, secured transactions and commercial paper.

ECONOMICS (ECN)

Students may major in economics in either the Franklin College of Arts and Sciences or the College of Business Administration. A.B. students majoring in economics and seeking advising should go to the Economics Department in Room 139, the College of Business Administration Building (Brooks Hall).

ECN 105 and 106 are prerequisites for all other economics courses except 545.

105. Principles of Macroeconomics. 5 hours.

Income, employment and other macroeconomic theory with applications to current economic problems.

106. Principles of Microeconomics. 5 hours.

Introduction to the price and market system with applications on microeconomic theory to current economic problems.

115H. Principles of Economics I (Honors). 5 hours.

Not open to students with credit for ECN 105. Income, employment, and other macroeconomic theory with applications to current economic problems.

116H. Principles of Economics II (Honors). 5 hours.

Not open to students with credit for ECN 106. Introduction to the price and market system with applications of microeconomic theory to current economic problems.

133. Economic Development of the United States. 5 hours.

American economic development from the colonial period to the present; economic factors involved in industrial growth and the resulting economic problems.

134. Economic Development of Europe. 5 hours.

Development of the economic aspects of civilization in medieval and modern times; evolution of economic institutions; historical background of present economic problems.

143H. Economic Development of the United States (Honors). 5 hours.

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

340. Internship and/or Cooperative Education. 1-15 hours.

Prerequisite: Upper division economics majors and permission of department.

Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required.

341. (MAN) Environment of International Business. 5 hours.

Not open for major credit to students in economics and finance.

Prerequisite: Nine hours of economics or permission of department.

Introduction to the economic environment surrounding multi-national business operations. Special attention is given to theories, problems, and policies of the world monetary system, international trade, and foreign investment.

386. Labor Economics. 5 hours.

Survey of labor organizations, wages, hours, unemployment, labor legislation and current developments in labor. Tools of economic analysis are utilized.

396H. Labor Economics (Honors). 5 hours.

Not open to students with credit for ECN 386. Survey of labor organization wages, hours, unemployment, labor legislation and current developments in labor.

402. Economics of Natural and Environmental Resources. 5 hours.

An analysis of the economic and physical principles underlying the use of our natural resource base. The economic sources of environmental problems will be examined as well as policies put forth to correct these problems.

405. Intermediate Micro-Economic Theory. 5 hours.

Economic theory of households and firms, determination of prices and allocation of resources.

406. Intermediate Macro-Economic Theory. 5 hours.

National income accounting and theory. Determination of national income, employment, price level, and growth.

410. Economic Growth and Development. 5 hours.

Problems and programs of economic growth; specific attention directed to underdeveloped areas, national economics, and regions. International agencies and coordinated efforts in economic development processes will be appraised within a theoretical reference.

437. Comparative Economic Systems. 5 hours.

Analysis and appraisal of the theories underlying economic systems; proposed and existing

schemes with respect to the maintenance of full employment; distribution of income, and encouragement of progress.

447. The Economics of Industrial Organization. 5 hours.

Industrial organization is a theoretical and empirical study of how structure and conduct of industries affect economic performance and public policies. Structure includes studies of concentration, barriers to entry; conduct includes analysis of pricing and product strategy; performance includes price-cost patterns, profits and technology; public policies include antitrust law.

448. Public Utilities, Regulation, and Enterprise. 5 hours.

Nature, background and significance of public utilities in our economy; economic and philosophic basis for government regulation and ownership in the public utilities sector; legal basis for and restrictions upon federal, state, and local regulatory authorities; development characteristics, rights, and duties of regulated industries; utility problems of regulation (rates, service, securities).

449. Economic Analysis of Law. 5 hours.

This course will deal with the economics of law and government. The court (common law) and legislative (statute law) systems are viewed as resource allocating mechanisms which supplement or replace the market. An economic analysis of the behavior of these systems and of the output of the systems is provided; consideration is given to the implications of each system for efficiency.

480. International Trade: Theory and Policy. 5 hours.

Theoretical analysis, historical survey and current problems of international trade; an examination of international economic policies and institutions especially as they relate to national political and economic objectives; trade barriers and controls.

489. The Labor Movement. 5 hours.

Prerequisite: ECN 386.

Historical background of modern industrial relations; economic, social and political forces contributing to the current problems in labor economics.

490. (MAN) Labor Legislation. 5 hours.

Prerequisite: ECN 386.

An economic analysis of the problems and issues arising out of the legislative and judicial efforts to define the rights, duties, and responsibilities of labor organizations and management in the field of industrial relations.

491. (MAN) Collective Bargaining. 5 hours.

Prerequisite: ECN 386 and 490.

The collective bargaining process with special reference to economic implications.

493. Industrial Relations Systems. 5 hours.

Prerequisite: ECN 105, 106 or permission of department.

The study of the growth, development, and economic import of labor movements in selected countries.

494. Labor Market Analysis. 5 hours.

Prerequisite: ECN 386.

A presentation of current theories, recent empirical investigations and historical and current data source materials in the area of labor supply at the local, state, regional, and national levels. The course will focus upon (1) evaluation of the quality and quantity of the labor resource available to a labor market; (2) application of labor market data by firms and government agencies; and (3) the role of the labor resource in explaining the South's regional position in the national economic setting.

495. Economics of Population. 5 hours.

Economics and social results from population change, particularly with respect to economic opportunities, employment, investment, international trade, and economic development; explanation and forecasting of population trends.

496. Managerial Economics. 5 hours.

Concepts, tools and methods of economic analysis relevant to a broad cross section of decisions within the business firm; analysis of market demand, cost relevant to various decisions; capital budgeting; and interrelationships between price policy, costs, promotion outlays, operating rates, capital budgets and financing in the short and long run.

497. Economic Evolution of the United States. 5 hours.

Economic evolution of the United States emphasizes use of tools of quantitative and qualitative analysis as applied to American economic evolution.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499. Quantitative Analysis for Economists. 5 hours.

Prerequisite: MS 312.

The general linear correlation model is

developed and the inferences that can be drawn from the model are discussed.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

512. (RE) Urban and Regional Development. 5 hours.

See RE 512.

545. Contemporary Economics for Non-Majors I. 5 hours.

Prerequisite: Upper division standing or permission of department.

Employment theory. Emphasis is placed upon recent development and varying points of view in contemporary economics. May not be counted as part of a degree program in economics or business administration.

598. Senior Independent Study. 1 hour.

Prerequisite: ECN 405 and 406 and senior division standing.

Senior Independent Study in Economics consists of a senior paper as required by the department for a degree in Economics. The paper is to be written under the direction of any assistant professor or higher rank faculty member in the Economics Department.

MANAGEMENT (MAN)

Prerequisites: MAN 351, *Management and Organizational Behavior*, is a prerequisite for all management department courses numbered 300 or above with the exception of MAN 320, *Operations Analysis*. MAN 362H, *Principles of Organization and Management (Honors)*, may be taken in lieu of MAN 351.

109. (SPC) Interpersonal Communication. 5 hours.

See SPC 109.

201. Introduction to Organizational Communication. 5 hours.

This course is an examination of communication within the organizational context. Students are introduced to organizational communication through a variety of reading assignments, case studies, and lecture/discussion sessions that deal with various aspects of organizational communication.

202. Introduction to Interpersonal Communication. 5 hours.

This course concentrates on interpersonal communication by considering such topics as the communication process, non-verbal communication and interviewing. During the

course, students are exposed to various reading and lecture/discussion sessions. Each student will participate in some type of face-to-face communication situation two times during the course. While the student is exposed to theoretical considerations, the major thrust of the course is involving the student in interpersonal communication situations.

256. (SPC) Discussion Methods. 5 hours.
See SPC 256.

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

320. Operations Analysis. 5 hours.
Prerequisite: MS 312.

This introductory operations management course provides a survey of the concepts, problems and managerial solution aids involved in creating goods and services. Topics include output forecasting, product and process design, facility location and layout, project planning and control, and production/inventory planning and control.

321H. Operations Analysis (Honors). 5 hours.
Not open to students with credit for MAN 320.
Prerequisite: MS 312.

This introductory operations management course provides academically talented students a survey of the concepts, problems, and managerial solution aids involved in creating goods and services. Topics include output forecasting, product and process design, facility location and layout, project planning and control, and production/inventory planning and control.

340. Internship and/or Cooperative Education. 1-15 hours.

Prerequisite: Permission of department.
Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required. (Departmental Approval Required)

341. (ECN) Environment of International Business. 5 hours.
See ECN 341.

351. Management and Organizational Behavior. 5 hours.
Prerequisite: Junior standing.

Analysis of management functions and processes as applied to organizations, includes fundamentals of staff and operative management, management principles and techniques, application of techniques to specific fields. Study of human behavior in organizations, with emphasis on problems of organization

structure, authority and responsibility, motivation and leadership. Particular attention will be given to motivation, authority relationships, and organization structure as their interactions with behavior processes make efficiency more or less difficult to achieve.

352. Operations Design. 5 hours.
Prerequisite: MAN 320.

This course shall concentrate on designing operating systems. Such topics as product design, process design, facility size and location, facility layout, economic equipment decisions, the organization of human resources within operating systems, and job design and work measurement shall be covered in depth.

362H. Principles of Organization and Management (Honors). 5 hours.

Not open to students with credit for MAN 351. Fundamentals of staff and operative management; major emphasis is given to an analysis of the process of management as it involves concepts, behavior and practices; techniques underlying the basic management functions of organizing, planning, directing and controlling are developed and applied, through case analysis.

401. Conceptual Foundations of Business. 5 hours.

Examination of the intellectual, cultural, and legal concepts underlying the business system. Relationships of business systems to modern industrial society.

456. (SPC) Group Discussion and Conference Leadership. 5 hours.
See SPC 456.

467. (SPC) Interviewing. 5 hours.
See SPC 467.

490. (ECN) Labor Legislation. 5 hours.
See ECN 490.

491. (ECN) Collective Bargaining. 5 hours.
See ECN 491.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

540. Business and Society. 5 hours.

A study of the major facets of the American business system in their historical and social background; growth of corporate capitalism and industrial state and business institutions in their interaction with cultural and social environment.

541. Computers and Management. 5 hours.

Prerequisite: MS 312.

This course covers a broad spectrum of MIS topics including computer hardware and software, computer applications, computer-based information systems, and the impact of the computer on organizational personnel, organizational structure and society. It is not open to MIS majors.

542. Business Ethics. 5 hours.

Prerequisite: MAN 351.

This course entails a detailed study of the ethical dimension of business and management practice. Topics covered include the meaning and nature of business ethics, the ethical climate in business today, forces which influence ethical behavior, ethics in the management hierarchy, and improving business ethics.

549. Entrepreneurship/New Venture Formation. 5 hours.

Prerequisite: ACC 110, MKT 360, FIN 330.

This course will deal with the characteristics of the entrepreneur, a brief history of independent business, causes of success and failure of independent businesses, and the factors involved in starting up an independent business on a sound basis.

552. International Business Policy: Principles and Cases. 5 hours.

Examination of some of the major problems that confront a manager who operates across international boundaries from a base in a single country, or who maintains affiliates and subsidiaries in several national jurisdictions, the greater emphasis being on problems involved in the crossing of national boundaries.

553. Operations Planning and Control. 5 hours.

Prerequisite: MAN 320.

Acquaints the student of operations management with the design and operation of production planning and control systems. The primary emphasis will be on tools and techniques currently practiced in industrial settings. The topics studied include: Forecasting for Production Planning, Aggregate Planning and Master Scheduling, Inventory Planning and Control, and Shop Loading and Scheduling.

554. Small Business Management. 5 hours.

This course is designed to acquaint the student with the aggregation of activities that are involved in the planning, establishing/entering a small business, and in the management of a small business enterprise. Special consideration will be given to the feasibility and the

preparation of a plan of action for entering a new business or for entering an established business.

556. Special Problems in Small Business. 5 hours.

Prerequisite: MAN 549 and 554.

This course begins with a study of the environment of small businesses and the factors leading to success and/or failure, then moves into the particular approaches and tools utilized by the more successful businesses and applies those tools to an operating concern. The final part of the course involves the student serving as a counselor to a small business that has requested assistance.

560. Management Information Systems. 5 hours.

Prerequisite: MS 209.

Management information systems are created to serve the information needs of organizational personnel, especially the management group. This course covers the theory and practice of management information systems development, implementation, and operation.

561. Systems Analysis and Design. 5 hours.

Prerequisite: MAN 560 and CSC 503 and MS 539 or CSC 411.

Introduction to general systems theory, its historical development and application. Methods of configuration studies, feasibility studies, and trade-off analysis. Phases in development of large-scale man-machine systems.

563. Building Decision Support Systems for Management. 5 hours.

Prerequisite: MAN 560.

Decision support systems are the highest level of information support systems which aid the manager in the decision-making process. This course provides the student with the skills necessary to conceptualize, build, and implement decision support systems in organizations.

565. Structured Design and Implementation. 5 hours.

Prerequisite: MAN 561.

Advanced study of structured systems development. Emphasis on strategies and techniques of structured analysis and structured design for producing logical methodologies for dealing with complexity in the development of information systems.

567. Information Resource Management. 5 hours.

Prerequisite: MAN 560.

Planning, organizing and controlling the information systems function. Topics include:

computer center administration, motivating computer personnel, project selection, privacy, security, and implementation strategies.

569. Special Topics in Management Information Systems. 5 hours.

Prerequisite: MAN 560.

The management information systems field evolves rapidly and covers many topic areas. This course explores recent developments in areas such as office automation, data communications, and the implementation of management information systems.

577. Operations Management: Problem Integration. 5 hours.

Prerequisite: MAN 352 and 553.

For operations management majors, this course builds upon and integrates the knowledge acquired in prerequisite operations management courses. Designed to develop analytical problem-solving and decision-making skills with respect to operations management situations while particular attention is devoted to the interactions the operations management function exhibits both internally within itself and externally between other functional areas.

582. (PSY) Personnel Program Development. 5 hours.

Prerequisite: MAN 585 or PSY 414.

This is an experiential/skills building course in which students gain practice in dealing with matters such as job analysis and the preparation of job descriptions, developing performance evaluation systems, designing compensation plans, and personnel program evaluation.

585. Personnel/Human Resource Management. 5 hours.

An introduction to personnel/human resource management. Topics introduced include human resource planning, staffing, training and development, compensation, safety and health, and labor relations.

586. (PSY) Compensation Administration. 5 hours.

An examination of the internal and external determinants of compensation within an organization. The role of job analysis, job evaluation, and the compensation survey will be studied. The total compensation package, including monetary and nonmonetary rewards, will be analyzed as will those problems often encountered in compensation administration.

588. (PSY) Personnel Selection and Placement. 5 hours.

Prerequisite: MAN 585 or PSY 414.

A study of methods applicable to the develop-

ment of valid standards of personnel selection and placement with the use of employment tests, the personal interview, and other kinds of personal data.

589. Federal Regulation of Personnel Management. 5 hours.

Prerequisite: MAN 585 or permission of department.

Federal regulation of personnel/human resource management in areas such as equal employment opportunity, occupational safety and health, and employee benefit plans.

592. Problems in Human Resource Utilization. 5 hours.

A treatment of selected areas of current concern regarding the utilization of human resources.

594. Human Resource Planning and Development. 5 hours.

A study of concepts and methods appropriate to the area of human resource planning and development in contemporary organizations; the application of concepts to the development process and to the design of training programs.

595. Administrative Practices. 5 hours.

A study of concepts and research findings pertaining to individual and group behavior in organizations; nature and crucial importance of communications, employee motivations and group dynamics; development of greater effectiveness in organizations through a better understanding of managerial philosophies, procedures and techniques.

596. (SPC) Organizational Communication. 5 hours.

Prerequisite: Senior standing.

Analysis of human communication patterns in organizations. Special attention to communication policies, procedures, and practices in administration. Examination of functions, philosophies, methods, and characteristics of management communication.

597. Organization Theory. 5 hours.

Analytical study of theories of organization and the factors affecting the functioning of organizations in different situations. Focus will be on the implications of theories and research findings in the design and management of organizations.

599. Business Policy. 5 hours.

Prerequisite: MAN 320, 351, FIN 330, MKT 360. Senior standing.

Building upon and integrating the knowledge and methods learned in the major fields in business administration, designed to develop analytical, problem-solving and decision-

making skills in situations dealing with the firm as a whole. This course is designed for final quarter seniors.

MANAGEMENT SCIENCES (MS)

209. Introduction to Computers in Business. 5 hours.

An introduction to computers and the use of computers in a business environment. This course is intended to prepare the student to use the computer. FORTRAN language is taught.

219H. Introduction to Computers in Business (Honors). 5 hours.

Not open to students with credit for MS 209. An introduction to computers and use of computers in a business environment. This course is intended to prepare the student to use the computer. FORTRAN language is taught.

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

312. Statistical Analysis for Business. 5 hours. Prerequisite: MS 209 and MAT 207 or equivalent.

Introduction to the application of statistics to business. Descriptive statistics, statistical distributions, parameter estimation, test of hypothesis, and simple regression and correlation are emphasized. This course must be completed prior to receiving credit for a major course; however, it may be concurrently scheduled with the first scheduled major course. Students may not receive credit for both MS 312 and STA 200. MS 312 is required of all B.B.A. degree candidates unless an equivalent course was completed prior to a student's transfer into the B.B.A. program.

322H. Statistical Analysis for Business (Honors). 5 hours.

Prerequisite: MS 209 and MAT 207 or equivalent.

Not open to students with credit for MS 312. This course offers an opportunity for more intensive examination of the theory and application of statistical measures. Inference, including hypothesis testing, is emphasized. Students become familiar with important statistical works and are introduced to such concepts as variance analysis, and multiple and partial correlation.

340. Internship and/or Cooperative Education. 1-15 hours elective credit.

Prerequisite: Permission of department.
Students are permitted to enter business

establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required. (Departmental Approval Required)

500. Survey of Operations Research. 5 hours. Prerequisite: MAN 320.

An introduction to the use of operations research techniques in solving business problems. Linear programming, queuing theory, simulation and stochastic models are examined.

505. Introduction to Simulation. 5 hours. Prerequisite: MS 500.

Introduction to the building and use of simulation models in business. Coverage includes random number and process generators, construction and validation of simulation models and model implementation.

512. Sampling Methodology for Business. 5 hours.

Prerequisite: MS 322H or STA 421 or equivalent.

Introduction to sampling methods commonly used in business. Emphasis is on understanding implementation problems and how sampling methods are used in business.

519. Applications of Small Computers in Management Science. 5 hours.

Prerequisite: MS 535 or CSC 503.

This course is designed to familiarize students with small computer systems through participation in the use of small computers and through projects in software applications.

532. Business Forecasting Methods. 5 hours. Prerequisite: MS 312.

Introduction to the methods and application of forecasting techniques commonly used in business. Techniques such as moving averages, exponential smoothing, regression analysis, time series analysis and Box-Jenkins methods are surveyed. Emphasis is on implementation through relevant projects.

535. Computer Methods in Management Science. 5 hours.

Prerequisite: ACC 530 or permission of department.

Technical training in computer programming and in the characteristics and function of computer hardware to support the use of management science methodology in business.

539. Introduction to Data Base Models in Business. 5 hours.

Prerequisite: MS 535 or CSC 503.

Introduction to distributed processing systems

(hardware/software), data base management systems, and decision support systems. Focus will be from an application point of view.

552. Applied Regression Analysis. 5 hours.
Prerequisite: MS 322H or STA 421 or equivalent.

Use of regression analysis in business. Simple and multiple regression; correlation; special problems in applications to business.

597. Special Topics in Management Science. 1-5 hours; repeatable for maximum of 15 hours credit.

Prerequisite: MS 312. Junior standing.

A program of independent study, including reading of advanced management science topics and projects related to those topics. Scheduling of this course must be approved by instructor.

MARKETING (MKT)

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

340. Internship and/or Cooperative Education. 1-15 hours.

Prerequisite: Three years of college work leading to a B.B.A. degree.

Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required. (Departmental Approval Required)

360. Principles of Marketing. 5 hours.

Prerequisite: Junior standing.

This course is concerned with the estimation of demand, consumer buying behavior, adaptation of products to markets, selection of channels of distribution, sales management, advertising, pricing, measurement of marketing efficiency, and procedures for planning and controlling marketing operations. The economic, social, and political forces that constantly change the market environment are stressed.

369H. Principles of Marketing (Honors). 5 hours.

Not open to students with credit for MKT 360. Examines marketing methods, concepts, and practices. Problems are used to investigate decision-making processes and illustrate the administration and management of marketing operations.

465. Marketing Research and Analysis. 5 hours.

Prerequisite: MKT 360 and MS 312.

A study of the role of research in marketing decision-making, the research process, scientific method, information gathering techniques and analysis and interpretation of research findings.

475. Marketing Decision-Making Techniques. 5 hours.

Prerequisite: MKT 360 and MS 312.

The application of analytical techniques in marketing. Illustrates the use of quantitative methods in product planning, promotion, physical distribution, and pricing.

542. Carrier Management. 5 hours.

Prerequisite: MKT 559 or equivalent.

Covers the management of carrier operations. Emphasis is placed on labor productivity, equipment purchasing, pricing, scheduling, and carrier policies and strategies.

543. Current Transportation Issues. 5 hours.

Prerequisite: MKT 559.

The place of transport in our system so far as it is determined by economic, business, governmental, and social requirements. A study of the development of regulation of transport with particular interest in the social aspects.

558. International Marketing. 5 hours.

Prerequisite: MKT 360.

A study of international marketing and the cultivation of international markets by business enterprises. Emphasis is placed on formulating international marketing plans and their implementation.

559. Principles of Transportation. 5 hours.

Prerequisite: MKT 360.

A survey of rail, motor, water, air, and pipeline transport. The different forms of transportation are analyzed in terms of services rendered, costs, labor relations, prices, and issues in national transport policy.

560. Principles of Retailing. 5 hours.

Prerequisite: MKT 360.

The basic concepts and analytical tools of retailing, types of organizational structure, store location, personnel, merchandising, promotion, services, and control techniques.

561. (PSY) Behavioral Theory and Marketing. 5 hours.

Prerequisite: MKT 360.

This course deals with the motives, attitudes, and expectations of consumers and businessmen that contribute to an understanding of the marketing process.

562. Personal Selling. 5 hours.

Prerequisite: MKT 360. College of Business Administration requirements for upper division.

An examination of the theory and practice of salesmanship. Its purpose is primarily to give a professional foundation to students who will be involved in personal selling careers, and secondarily to acquaint those who will be engaged in marketing management with the capabilities and the problems of the sales force.

563. Advertising. 5 hours.

Prerequisite: MKT 360.

The management of advertising activities in the business organization, advertising agency operation, media evaluation and selection, creative strategy, and campaign planning.

564. Sales Management. 5 hours.

Prerequisite: MKT 360.

A study of sales force management. Topics covered include: selecting, training, compensating, motivating, and evaluating sales personnel.

565. Retail Administration and Policy. 5 hours.

Prerequisite: MKT 560.

The analysis and solution of retail problems, integration of retailing functions, development of policies for managing these functions.

567. Marketing Promotion: Personal and Non-personal Selling. 5 hours.

Prerequisite: MKT 360.

The nature and scope of selling activities, especially salesmanship and sales promotion. Promotional theory, problems, and strategies are emphasized; legal, ethical, and moral implications of promotion are considered as well.

569. Physical Distribution. 5 hours.

Prerequisite: MKT 360.

Functions relating to the buying and selling of transport service: inventory control, packaging, storage, scheduling, information flows and location analysis; coordination with other functions of the business organization to reduce total distribution costs of an organization.

571. Marketing Strategy. 5 hours.

Prerequisite: MKT 360.

This course covers the integration and coordination of product development, promotional strategy, physical distribution, and pricing in planning and controlling marketing operations. Stress is placed upon the managerial aspects of marketing.

584. Product Planning. 5 hours.

Prerequisite: MKT 360.

Examines the essential components of product management including a systematic

examination of methods of analysis, planning, implementation, and control of product decisions.

REAL ESTATE (RE)

300 and above level courses: see **Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.**

340. Internship and/or Cooperative Education. 1-15 hours.

Prerequisite: Permission of department.

Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required. (Departmental Approval Required)

390. Urban Land Principles. 5 hours.

A survey of the changing pattern of urban development; the structure of the real estate market, and characteristics of real estate resources. Real estate financing methods, introductory valuation principles, location analysis, city structure and land use practices. Prerequisite for all other real estate courses.

391. Real Estate Brokerage. 5 hours.

Prerequisite: RE 390 or permission of department.

Broker-agency regulations, duties of the broker and his employees are part of the management topics covered in this course. Methods of operating a real estate brokerage office including subdividing techniques, listing agreements, closing statements and real estate instruments constitute a major part of this course. Syndications and tax free exchanges are included as casework assignments.

392. Real Estate Management. 5 hours.

Prerequisite: RE 390 or permission of department.

Real property management, including the management of urban redevelopment projects, tenant selection and characteristics of residential leases are among topics covered in this course. Cooperative apartments, condominiums, commercial leases, office and apartment building analysis represent the main topics of study. Syndications and corporate management are compared to proprietary ownership. Methods of analyzing real estate operating statements for management decisions are also introduced.

508. Principles of Valuation. 5 hours.

Prerequisite: RE 390 or permission of department.

An introductory valuation course; the subject

matter deals mainly with the logic of valuation theory. Study material covers conventional valuation techniques in addition to new valuation methods introduced by statistical inference and computer terminal models adapted to investment property. Case problems use computer models developed for decision-making purposes.

509. Real Estate Investment. 5 hours.

Prerequisite: RE 390 or permission of department.

An introduction to techniques for evaluating income producing real property, including such topics as cash flow methods, taxation, role of financing in investment decisions, and applications to a variety of investment opportunities.

510. (FIN) Real Estate Finance. 5 hours.

Prerequisite: RE 390 or permission of department.

A study of the instruments, techniques, and institutions of real estate finance; sources of funds; mortgage risk analysis; emphasis on typical policies and procedures used in financing of residential, industrial, and commercial properties, including commercial leasing.

511. (BL) Real Estate Law. 5 hours.

Real Estate Law is a study of how the law affects real property. Topics covered include property ownership and interests, restrictions on such interests, real estate sales documents, landlord-tenant agreements, conveyances, and broker-owner relationships. Also discussed are the licensing requirements for brokers and salespeople.

512. (ECN) Urban and Regional Development. 5 hours.

Prerequisite: ECN 105 and ECN 106 or senior division standing.

This course identifies and analyzes the major forces that shape the development of regions. Regional development is viewed primarily in terms of changes in the level, distribution, and stability of regional income and employment. The last part of the course analyzes several contemporary, intra-urban problems: pollution, transportation, local public services and political fragmentation.

520. Housing Markets. 5 hours.

Prerequisite: RE 390 or permission of department.

Emphasis is placed on the analysis of housing markets: the supply of and the demand for housing. Contemporary issues include blight and renewal, minority housing markets, urban sprawl, and the relationship of property taxes to housing conditions.

590. Problems in Real Estate. 5 hours.

Prerequisite: Ten hours of real estate courses, including RE 390.

Individual study of the economics of urban land use in metropolitan areas; city planning; farm and rural land economics; industrial real estate practice and industrial property development. Assigned study projects and field trips.

RISK MANAGEMENT AND INSURANCE (INS)

288. Personal Risk Management. 5 hours.

A study of the identification of personal loss exposures and their treatment. The course will examine property, liability, life, and health exposures as well as retirement income and estate planning. A comprehensive personal risk management program is developed.

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

340. Internship and/or Cooperative Education. 1-15 hours.

Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required. (Departmental Approval Required)

381. Principles of Risk and Insurance. 5 hours.

Introduction to the basic principles of life, property, liability and other areas of insurance from the viewpoint of the purchaser. Consideration is given to the importance of risk bearing in personal and business affairs and the various methods of handling risk with emphasis on insurance arrangements. Designed for non-insurance majors as well as a basis for more advanced courses.

382H. Risk and Insurance (Honors). 5 hours.

Not open to students with credit in INS 381. This course is structured as an interdisciplinary approach to the study of the principles of risk and insurance in the areas of managerial decision making: personal, business and professional. It is an analytical study of risk and insurance with emphasis on risk handling through insurance techniques.

385. Commercial Lines Insurance. 5 hours.

Prerequisite: INS 381.

Risk management and insurance tools applied to the needs of the corporate enterprise. Subjects covered are direct and indirect property exposure, third party claims, workers' compensation (insurance versus self-insurance)

fidelity, crime, boiler and machinery, lease analysis, property valuation and insurance surveys.

387. Life Insurance. 5 hours.

Prerequisite: INS 381.

A study of individual life, health, and annuity contracts and life insurance programming, types of insurance, investments, selection, taxation and regulation of companies.

502. Casualty Insurance Problems. 5 hours.

Prerequisite: INS 381 and 385.

Advanced study of all types of casualty insurance; automobile, professional and general liability, multi-line coverage, and how these relate to the risk-bearing function; legal and technical aspects of selection of risk, contract underwriting and loss adjustment.

503. Property Insurance Problems. 5 hours.

Prerequisite: INS 385.

Practical application of property insurance policies, including multiple-lines, to specific risk-bearing problems; survey and insurance counseling to complex problems; legal and technical aspects of selection of risk, contract underwriting, and loss adjustment.

504. Life Insurance Law and Reserve Calculations. 5 hours.

Prerequisite: INS 381.

The legal interpretations and contract provisions, beneficiary designations and settlement options of the life insurance contract. The mathematic approach to premium rates and reserves is also analyzed. Partial preparation for Part HS 302 of the CLU examinations.

505. Business Life Insurance. 5 hours.

Prerequisite: INS 381.

A study of the continuation problems of proprietorships, partnerships, and corporations and their solutions through the use of funded buy-sell agreements. Other problems covered include key man insurance, non-qualified deferred compensation and split-dollar plans. Partial preparation for Part HS 309 of the CLU examinations.

506. Social Insurance. 5 hours.

An interdisciplinary study of public and

private insurance systems and related governmental programs applicable to problems of economic insecurity due to risks inherent in society, including premature death, disability, retirement and unemployment. Roles of government, employers and individuals in protecting their income flow from risks through risk-aversion systems are analyzed.

507. Insurance Agency Management. 5 hours.

Prerequisite: INS 381, 385.

The economic functions performed by the general agency and its position in the insurance distribution system. Emphasis is given to the management aspects of agency operations from the sales, administrative and financial viewpoint.

511. Pension Planning and Employee Benefits. 5 hours.

Prerequisite: INS 381 or equivalent.

Private approaches to the problems of employee financial security. Components of employee benefit programs. Employee attitudes toward benefits. Theory of group programs. Group life and health insurance. Basic features of pension plans. Funding, vesting, tax, actuarial and communication problems. Profit sharing. Plans for self-employed. Effect of ERISA. Cases and problems.

513. Business Risk Management. 5 hours.

Prerequisite: INS 381 and 385.

An analysis of the risks faced by the business enterprise and the study of the various methods of handling these risks including loss prevention, risk retention, self-insurance and corporate insurance programs. Extensive use of case method and logical decision making.

599. Business Policy — Insurance. 5 hours.

Prerequisite: Senior standing.

This course seeks to integrate the techniques, methods, and knowledge from all areas of business administration into a meaningful whole; problems of setting policies which enable the firm to accomplish its objectives will be studied. This course is designed for final quarter seniors.

THE COLLEGE OF EDUCATION

ADMINISTRATIVE OFFICER

Gerald R. Firth, B.A., M.A., Ed.D., *Acting Dean*

GENERAL INFORMATION

Purpose and Organization

The College of Education is the division of The University of Georgia that provides and administers all professional programs and courses designed for the preparation of teachers and other education-related positions. In its role of educational leadership, the College recruits and selects prospective educational workers, provides pre-service and in-service training programs, conducts research to solve educational problems, and offers field service to all types and levels of educational institutions. The University is accredited by the Georgia State Department of Education, the Southern Association of Colleges and Schools and the National Council for the Accreditation of Teacher Education.

Facilities

The College of Education utilizes extensively the facilities of the University, the community, and the schools. Administrative offices are located in Aderhold Hall. In addition, the following buildings are primarily used for College of Education programs: Dudley, Fain, Industrial Arts, Mental Retardation Center, Physical Education Building, Stegeman, and Tucker Hall.

Degrees Offered

The College of Education prepares its students for the undergraduate degree of Bachelor of Science in Education. By coordinating programs with other appropriate colleges and schools, the College also prepares students for educational specialties within the undergraduate degrees of Bachelor of Science in Agriculture, Bachelor of Fine Arts, Bachelor of Science in Home Economics, and Bachelor of Music.

Through the Graduate School of the University, the following degrees are offered: Master of Education, Master of Arts in Education, Master of Art Education, Master of Music Education, Educational Specialist, Doctor of Education, and Doctor of Philosophy. See the Graduate School Bulletin for further information.

Organization of Undergraduate Programs

Undergraduate programs at The University of Georgia prepare teachers and other educational workers in the following fields:

Early Childhood (kindergarten, grades 1-4)

Middle School (grades 4-8)

Secondary (grades 7-12) in agriculture, business education, distributive education, home economics, industrial arts, and the six academic areas of English, mathematics, foreign language, science, social studies, and speech.

Grades 1-12 in art, music, foreign language, physical education, health education, health occupations education, speech correction, speech pathology and audiology, and mental retardation.

Majors are also offered in recreation, dance and educational psychology.

School media specialist can be added to one of the above teaching areas.

The entire resources of the University are used in the education of teachers.

The College of Education administers all courses in professional education and provides teaching fields in industrial arts, health education, physical education, recreation, safety education, library/media education, and in special education. Other courses in teacher preparation programs are taught by other divisions of the University.

Although specific course requirements vary with the teaching field, each undergraduate program includes the following elements:

- (1) general education, a sequence of courses from a variety of fields, taken primarily in the College of Arts and Sciences in the freshman and sophomore years.

- (2) the teaching field or major, consisting of courses designed for the specific subject or grade level of prospective teaching, offered in the College of Agriculture, College of Arts and Sciences, College of Business Administration, College of Education, and College of Home Economics.
- (3) work in professional education in the College of Education.

Certification

Certification is a function of the Georgia Department of Education and the student should become familiar with its requirements before applying for certification.

Matriculation

Most students who prepare for teaching matriculate in the College of Education and pursue one of the programs leading to the degree of Bachelor of Science in Education. Students matriculate in other colleges for specialized degrees with educational applications.

Students enrolled in other colleges of the University who seek certification as a teacher should apply for admission to Teacher Education, have their individual programs approved by the College of Education by the beginning of the junior year, and must meet all requirements of the approved professional programs.

A distinction is made between matriculation in a division of the University offering teacher education programs and formal admission to a program in teacher education, as described in "Admission to Teacher Education."

Honors Program

Students in the College of Education are encouraged to participate in the Honors Program. Admission of beginning students is by invitation. Enrolled students with a cumulative average of 3.5 may apply for admission to the program. The College of Education offers individual study and Honors thesis courses. See the section "Program for Superior Students" for more information about this program.

Degree Requirements

Students are required to acquaint themselves with general degree requirements applicable to all students of the University as stated in the general information section of this bulletin.

Hours and Residency

A minimum of 195 quarter hours is required for a Bachelor of Science in Education degree. A minimum of 90 quarter hours must be taken in residence at the University.

Grades

A candidate for the Bachelor of Science in Education degree must have an average of 2.2 in all work attempted and may not have grades below 2.0 in more than 45 quarter hours. Any grade of less than 2.0 in the prescribed education and teaching field courses may not count for degree purposes.

Academic Advisement

The Center for Student Development of the College provides initial advisement for freshmen and transfer students. Following this initial advisement period, students are assigned to an advisor in their teaching field. Students confer with their advisors at least once per quarter to plan programs and pre-register.

Students who need additional counseling may obtain assistance from the student development office.

Admission, Retention, and Exit Policies

Enrollment in the College of Education does not constitute admission as a candidate for a professional degree in education. At the completion of 75 quarter hours credit, each student who seeks a professional teaching degree or professional teacher certification must apply for Admission to Teacher Education through the Office of Instruction, 122 Aderhold Hall. At this stage the student must have a cumulative grade point average of 2.2 and have completed ENG 101, 102, educational foundations courses, and Regents' examinations satisfactorily.

Enrollment in the curriculum and/or methods courses of the various teaching fields is subject to the approval of the program area concerned. In addition to the above requirements, some program areas require a higher cumulative grade point average and the completion of specified courses in the teaching field.

The following are the prerequisites for receiving a student teaching assignment: Student must be recommended by the teaching field department; must make application at the Office of Professional Laboratory Experiences, G-4 Aderhold, three quarters in advance of placement; must be "Admitted to Teacher

Education"; have at least a 2.2 cumulative grade point average; have completed essentially all required courses in the teaching field with a grade of at least "C" in each; have completed the prerequisite education courses with a grade of at least "C" in each (courses in curriculum and teaching procedures must have been taken on this campus); completion of the school practicum (required in most programs); and be in satisfactory personal health to assume responsibility in student teaching. A student is not permitted to student teach while on probation. Some program areas have requirements exceeding the above.

Candidacy for a Degree

After a student has earned 135 academic hours, an application for graduation is automatically sent by the Registrar's Office. The student must complete the application at once and return it to the Registrar. Failure to apply for graduation at this time may result in postponement of the graduation date.

SPECIAL SERVICES

Speech and Hearing Clinic

The speech pathology area is concerned with training of teachers and the conducting of research in speech. The Speech and Hearing Clinic extends its diagnostic and treatment services to all children and adults who have functional or organic problems of oral communication. Particular attention is given to assisting University students. Arrangements for these services are made through the chairman of speech pathology.

Special Education Clinic

The Special Education Clinic functions as a training laboratory for prospective teachers of children who are mentally retarded, physically handicapped, or emotionally disturbed. Detailed evaluation of educational and learning needs is followed by individual and small group therapeutic teaching. Children are accepted in the clinic as needed for training purposes. Arrangements may be made through the chairman, Program for Exceptional Children.

Reading Clinic

The Reading Clinic is concerned with the education of teachers of reading and the conduct of research in reading. This clinic offers

both diagnostic and corrective service to elementary and high school pupils.

Student Development Laboratory

The Student Development Laboratory provides counseling and other developmental personal growth experiences for all college-age students. Experiences include academic success training (study skills), human relations skill building, dealing with test anxiety, leadership training, improving creative thinking, asserting oneself positively, and personal decision making skill building. In addition, individual and group counseling opportunities are available. The program is coordinated and implemented by faculty and advanced graduate students in the Department of Counseling and Human Development Services. The Student Development Laboratory is located in 420 Aderhold Hall. Telephone (404) 542-1812, Extension 33.

PROFESSIONAL LABORATORY EXPERIENCES (Student Teaching)

Supervised observation-participation in cooperating schools is required of most candidates for a degree leading to professional certification. The degree of required participation in pre-student teaching laboratory experiences varies extensively among different teacher preparation programs. A minimum of one full quarter of student teaching is required of all teaching candidates.

Student teaching involves instruction in curriculum and in general and specific methods, through working with small and large groups of pupils. Student teaching activities are directed by college supervisors and selected cooperating supervising teachers. High school student teachers usually teach in one teaching field, middle grades in one or two teaching fields, and early childhood at a kindergarten or primary level.

Student teaching involves full-time placement in a school setting. It carries 15 hours credit and no additional coursework is permitted during student teaching. Students should anticipate that additional expenses will be incurred during student teaching as placement may require transportation and off-campus living arrangements.

Students in some programs participate in a school practicum prior to student teaching. Students should see their departmental advisor concerning this requirement.

**BACHELOR OF SCIENCE IN
EDUCATION DEGREE
REQUIREMENTS**

Undergraduate teacher education programs are approved by the State Board of Education and the National Council for the Accreditation of Teacher Education. A person completing any one of these programs may be recommended for certification in Georgia as well as in most other states.

The programs outlined lead to the degree of Bachelor of Science in Education with a major in the field specified except in agriculture, home economics, and music.

The B. S. Ed. programs typically include 195 quarter hours or more. Only five hours of Basic Physical Education (PEB 100-165) can be applied toward the 195 hour minimum requirement.

Core Curriculum

For general information on the core curriculum, see the Academic Program section of this bulletin, under the listing *The Core Curriculum*.

Generally, the following core curriculum is accepted by all departments within the College of Education. There may be slight variations in each program.

	HOURS
AREA I HUMANITIES	20
ENG 101, 102	10
CML 221, 222 (other literature courses are accepted)	10
AREA II MATHEMATICS AND NATURAL SCIENCE	20
MAT 100 (other mathematics courses are accepted)	5
Laboratory Science: BIO 101-101L, 102-102L; CHM 111 and 111L, 112 and 112L; GLY 125-125L, 126-126L; PCS 127-127L, 128-128L	10
Science elective: PCS 101; GGY 104, 120-120L, 121-121L; PHY 110	5
AREA III SOCIAL SCIENCE	20
POL 101	5
HIS 111, 112 or 251, 252	10
Social Science elective	5
AREA IV COURSES RELATED TO MAJOR	30
EFN 303	5
PSY 101	5
ART 300 or other art/music/crafts	5
SPC 108	5
Electives in teaching field	10

Art Education

B.S. Ed. In Art Education

	HOURS
AREA I HUMANITIES	20
ENG 101, 102	10
Literature	10
AREA II MATHEMATICS AND NATURAL SCIENCE	20
MAT 100 or PHY 110	5
BIO 101-101L, 102-102L or BOT 121-121L, 122-122L	10
PCS 101 or other Physical Science elective	5
AREA III SOCIAL SCIENCE	20
HIS 111-399	10
POL 101	5
Social Science Elective	5
AREA IV COURSES RELATED TO MAJOR	30
ART 120, 130, 230, 240	20
EFN 303	5
EAR 400 or EXC 500	5
MAJOR	50
ART 287, 288	10
Art History (Senior division)	10
Art Studio (2-Dimensional)	10
Art Studio (3-Dimensional)	10
Art Studio and Lab Electives	10
PROFESSIONAL EDUCATION	30
EPY 304	5
EAR 335, 336	10
EAR 546	15
ELECTIVES AND OTHER	25
PEB 100-165	5
HED 119	3
TOTAL	195

RECOMMENDED ELECTIVES:

EAR 345ABC (1-3 hours);
ART 523A-E (1-10 hours)

**Early Childhood Education
(Kindergarten, Grades 1-4)**

This program trains teachers for Kindergarten and grades 1-4. Students must have a GPA of 2.5 before entering Level I. The 2.5 GPA must be maintained in Levels II, III, and IV.

Freshman and Sophomore Years

	HOURS
ENG 101, 102	10
HIS 251 or 252	5
POL 101	5
Biological Science ¹	10
Physical Science ¹	5
MAT 205	5
MAT 206	5
PSY 101	5
PEB 100-165	5
Humanities Electives	15
Social Science Electives	10
Teaching Field Electives	5
General Electives	10

Junior and Senior Requirements

Professional Preparatory Requirements

EEN 300 Children's Literature	3
MUS 303 Music Skills and Fundamentals for Elementary School Teachers	3
MUS 305 Music Methods and Materials for Early Childhood Teachers	3
ART 305 Art and the Child	5
EXC 500 Introduction to Exceptional Children	5

PED 442 Movement Education for the Young Child	5
HED 442 Health in Early Childhood Education	3
CFD (PSY) 395 Introduction to Child Development	5
EFN 303 Introduction to Education	5
EAV (ESS) 401 Basic Instructional Media Competencies	3

Level I

ECE 343 Teaching and Learning Strategies I	3
ESC 442 Science for Early Childhood Education	5
EPY 304 Learning and Motivation	5
EEN 404 The Oral Language Arts—Early Childhood Education	3

Level II

ECE 302 Orienting Practicum	5
ERD 342 Teaching of Reading to Early Elementary Children	5
EMT 442 Mathematics Methods in Early Childhood Education	3
EEN 405 The Written Language Arts—Early Childhood Education	3

Level III

ECE 333 Primary School Program and Curriculum Development	5
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ERD 343 Corrective Reading in the Early Elementary Grades	5
EMT 441 Mathematics Learning: K-4	3
ESS 342 Early Childhood Social Studies Level IV	5
ECE 546 Student Teaching in Early Childhood Education	15
TOTAL	200

Middle School Education

This program is specifically designed for prospective teachers of upper elementary, middle school, and junior high school levels and provides training for teaching grades 4-8. Students select two areas of teaching specialization. Specific course requirements for teaching fields are listed by departments.

Freshman and Sophomore Years (General Education)

Humanities	20
Social Science	20
Mathematics and Natural Science	20
Teaching Fields	30
Basic Physical Education	5
Elective	5

Junior and Senior Requirements (Professional Education)

Teaching Fields	30
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The middle school program is field centered. Four quarters of lab experiences in middle schools are provided. Courses required for each professional quarter are:

Professional Phase I

EMS 303 Introduction to Middle School Education	18
ERD 352 Teaching of Reading in the Middle School	

EPY 304 Learning and Motivation	
HED 171 Principles of Personal Health	

Professional Phase II

EMS 503 The Middle School	13
ERD 353 Content Area Reading in the Middle School	

EAV (ESS) 401 Basic Instructional Media Competencies	
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Professional Phase III

EMS 504 The Middle School Curriculum	9
EXC 500 Introduction to Exceptional Children	

Professional Phase IV

EMS 546 Student Teaching in Middle School	18
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E—546 Student Teaching in Teaching Field A	
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E—546 Student Teaching in Teaching Field B	
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¹A minimum of 15 hours in science is required as a part of general education. Selections should include 10 hours in biological science in sequence (BIO 105, 106 or BOT 121, 122 or BIO 101, 102) and 5 hours in physical science.

Other		
Methods, Field C	5	
Methods, Field D	5	
TOTAL	198	
PED 307, 345ABC, 360-360L, 361, 372, 383, 463-463L		38
HED 335, 336		6
Electives		20

II. Health Education

Freshman and Sophomore Years

	HOURS
ENG 101, 102	10
SPC 108	5
Literature Elective	5
BIO 101-101L, 102-102L	10
ZOO 212-212L, 213-213L	10
CHM 111 and 111L or 112 and 112L	5
MIB 350-350L	5
HIS 251 or 252	5
POL 101	5
Social Science Electives	10-15
PEB 100-165	5
HED 119	3
HED 171	5
HED 301	2

School Health Education Option

Requirements	60
HED 370	5
HED 335	3
HED 336	3
HED 345	1-3
HED 511	5
HED 512	5
HED 546	15
HED 319	5
HED 521	5
Guided Electives	13
General Education Requirements	23
EFN 303 or EPH 380	5
EPY 304	5
EAV (ESS) 401	3
PED 361 or EXC 500	5
Fine Arts	5

Community Health Option

Requirements	68
STA 200, 421, or ERS 411	5
HED 370	5
HED 404	5
HED 405	3
HED 512	5
HED 513	5
HED 522	5
SED 575	5
HED 400	10
Guided Electives	20

MEDIA SPECIALIZATION FOR THE EARLY ELEMENTARY AND MIDDLE SCHOOL TEACHER

Educational media and library courses are open to elementary, middle school, and secondary teachers. By taking 40 quarter hours, (approved by the Department of Educational Media and Librarianship) including a 5-hour internship in a school media center, a student may satisfy training requirements for the MS-4 media specialist certificate. The T-4 is prerequisite for the MS-4. With the approval of the faculty advisor, some of these courses may be included among electives at the junior or senior years or they may be completed on a post-baccalaureate basis. Additional media and library courses carry graduate credit and, subject to the approval of faculty advisors, may be included in graduate degree programs.

Health and Safety, Physical Education, Recreation, and Dance

I. Physical Education

The physical education program prepares students for the undergraduate degree of bachelor of science in education (B.S.Ed.), and for T-4 certification to teach health and physical education, grades 1-12, in the State of Georgia.

Freshman and Sophomore Years

	HOURS
BIO 101-101L, 102-102L	10
ENG 101, 102	10
EFN 303	5
PED 178ABC, 179ABC	6
HED 171, 309, or 119	8
Humanities Elective	5
CML 221, 222; ENG 231G, 232G	5
CHM 111 and 111L or 112 and 112L	5
MAT 100	5
HIS 251 or 252 or exemption	5
POL 101 or exemption	5
PEB 100-165	5
Social Science Electives	10-20

Junior and Senior Requirements

ZOO 212-212L, 213-213L	10
EPY 304	5
PED 546	15
PED 310-321, 390-397	27

General Safety Option

Requirements	40
SED 445	5
SED 544	5
SED 575	5
SED 576	5
SED 400	10
HED 319	5
HED 521	5

An endorsement in Traffic Safety Education is also available.

III. Recreation and Leisure Studies

Freshman and Sophomore Years

	HOURS
BIO 101-101L, 102-102L	10
ENG 101, 102	10
Electives in General Education	15
PEB 100-165	5
HED 119	3
REC 118	3
CML 221, 222, ENG 231G, or 232G	5
SPC 108	5
PED 321	3
PED 390-397	9
CHM 111 and 111L or PCS 101	5
MAT 100	5
HIS 251, 252	10

Junior and Senior Requirements

All recreation majors will elect an option sequence of primary interest. Courses within the option will be selected by consultation with the major advisor.

Music, Arts, Drama, Industrial Arts	15
SOC 260 or above	5
HED 370	5
REC 345ABC	5
REC 203, 385, 386, 387, 389, 546	30
JRL 592	5
PED 307	5
EPY 304	5
Option sequence and electives	38
A. Public Recreation and Park Management	
B. Camping and Outdoor Recreation	
C. Therapeutic Recreation	
D. Voluntary Youth Service Agencies	
E. Community-School Recreation	

IV. Dance Education

This program of studies has been designed to enable the dance student to develop technical proficiency and choreographic ability, to gain experience in production, performance, and teaching; to explore the scientific, philosophic, and historic foundations of dance; to consider

the relationship of dance to other art forms and to related areas of study; to understand the function of dance as an educational tool and to become familiar with current research, problems and issues in dance education; and to experience dance as a total theater experience. Opportunities are provided for guided teaching experiences and individual study.

The program below leads to the B.S.Ed. degree in dance.¹

Freshman and Sophomore Years

	HOURS
ENG 101, 102	10
HIS 111 or 112	5
POL 101	5
MAT 100	5
BIO 101-101L, 102-102L	10
PSY 101	5
SPC 108	5
PHY 101	5
PEB 100-165	5
DED 250	3
DED 252	2
DED 257	3
DED 265A, B, C	6
DED 266A, B, C	6
DED 281	3
DED 352	3
DED Electives	5-10
Approved Electives	10-15

Junior and Senior Years

ENG 231G, 232G	10
ZOO 212-212L	5
HIS 251, 252	10
PED 360-360L	5
DED (PEB) 153A-F ²	6
DED 345A, B, C	3
DED 351	3
DED 353	3
DED 354A, B	6
DED 365A, B, C	6
DED 450	5
DED 451	5
DED 465A, B, C	6
DED 466A, B, C	6
DED Electives	5-10
Approved Electives	10-15

¹Some DED required courses may be substituted with other DED courses. Requirements will differ for transfer students.

²Satisfactory participation in one of three department dance companies for a minimum of six quarters is required of all dance majors.

Educational Psychology

This program is designed to provide an educational major for students who plan to pursue graduate training in educational psychology or related areas. The major may also be appropriate for those who intend to work with educational or service agencies in a non-teaching role. The flexible use of electives allows the student to acquire extensive background in areas of interest.

Freshman and Sophomore Years

	HOURS
ENG 101, 102	10
CML 221, 222 (or other literature courses)	10
MAT 100, 109 or STA 200 (or approved alternative)	10
Laboratory Science	10
(BIO 101-101L, 102-102L; CHM 111 and 111L, 112 and 112L; CHM 121 and 121L, 122 and 122L; GGY 121-121L, 122-122L; GLY 125-125L, 126-126L; PCS 127-127L, 128-128L)	
POL 101	5
HIS 251, 252	5-10
Social Science Electives	5-10
(HIS 111, 112; ANT 102; ECN 105, 106; GGY 101, 102; POL 202, 300)	
EFN 303 or EPH 380	5
PSY 101	5
Fine Arts Elective	5
(SPC 108, ART 300, DRA 300, MUS 300, EIA 332)	
Electives Related to Major	15
(PSY 258; SOC 105; SOC (PSY) 256; SOC 260; PHY 101, 102, 110; or other electives including MAT, Natural Sciences, or Social Sciences)	
PEB 100-165	5

Junior and Senior Years

EPY 304, 305, 401, 500	20
ERS 401 or 411	5
EPY 546	15
Education Electives	15
Psychology Electives	15
Electives Related to Major	10
Approved Electives	20

Music Education

This program leads to the degree Bachelor of Music (see Music, College of Arts and Sciences).

GENERAL SECONDARY TEACHERS PROGRAM

The programs in general secondary education are designed for prospective teachers of English, foreign languages (French, German, Latin, Spanish), mathematics, sciences (biology, chemistry, earth science, general science, physics), social sciences (economics, geography, history, political science, sociology), and speech in grades 7 through 12. Programs for prospective teachers in grades 7, 8, and 9 in the fields of mathematics, general science, and social science are included. The programs are described on the following pages under these departmental headings: (1) English education, (2) foreign language education, (3) mathematics education, (4) science education, (5) social science education, and (6) speech education. Requirements and prerequisites in the teaching field should be considered in choosing courses in the freshman and sophomore years. All prospective teachers should select a teaching field and plan their program with their advisor in the appropriate department of the College of Education. Completion of a program and meeting other requirements of the Georgia Department of Education qualify a student for a professional four-year teacher's certificate in a field in either grades 7 through 12 or grades 7 through 9.

English Education

The program provides training for a student for a professional four-year certificate to teach English in grades 7-12 (in Georgia).

Freshman and Sophomore Years (Core Program)

	HOURS
ENG 101, 102	10
ENG 231G, 232G	10
Mathematics	5
Laboratory Science	10
Math/Science Elective	5
Social Sciences	20
EFN 303S	5
EXC 500	5
Fine Arts	5
SPC 108	5
Foreign Language	10
PEB 100-165	5

TOTAL 95

Junior and Senior Years¹

Teaching Field:

	HOURS
ENG(LIN) 400T, History of the English Language	5
EEN(LIN) 507 English Language Studies for Teachers	5
ENG 432G Shakespeare: Part I or	
ENG 433G Shakespeare: Part II	5
British Literature (pre-1900)	5
American Literature (pre-1900)	5
20th Century Literature	5
EEN 506 Literature Study in the Secondary Schools	5
EEN 509 Composition in the Elementary and Secondary School Electives	5
	15
TOTAL	55

Professional Education:²

ERD 403 Teaching Reading in the Secondary School	5
EEN 335 English Curriculum in Secondary Schools	5
EEN 336 Teaching Procedures in Language Education	5
EEN 546 Student Teaching in English	15
TOTAL	30

Other Courses:

EPY 304 Learning and Motivation	5
Foreign Language or Cross-Cultural Course	5
Electives	5
TOTAL	15

Foreign Language Education (Secondary)

This program trains a student for a professional four-year certificate in Georgia to teach a foreign language in secondary schools.

Freshman and Sophomore years (Core Program)

¹All students who desire a teaching certificate in English must request an advisor in the Department of Language Education.

²A thirty-hour sequence will be taken during a two-quarter assignment to a public school field center. This sequence may be taken only by application, which must be made no less than one month prior to registering (early or regular) for the first of these two quarters. No other work may be undertaken during these two quarters. Consult the department's "selection/retention procedures" statement for specified criteria.

HOURS

ENG 101, 102	10
Literature	10
Mathematics	5
Science Sequence	10
Math/Science Elective	5
ANT 102	5
History	5
Social Science Electives	10
EFN 303S	5
EXC 500	5
Fine Arts	5
SPC 108	5
Teaching Field Electives	10
PEB 100-165	5
TOTAL	95

Junior and Senior Years³

Teaching Field:

Foreign literature, culture, and language (see specific courses listed below under appropriate language heading).	45
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Professional Education:

EPY 304 Learning and Motivation	5
EFL 335 Foreign Language Curriculum in the Secondary Schools ⁴	5
EFL 336 Teaching Procedures: Foreign Language ⁴	5
EFL 546 Student Teaching in Foreign Language Education	15
TOTAL	30

Other Courses:

HED 171 Principles of Personal Health	3
EFL 505 Teaching for Cross-Cultural Understanding	5
Approved electives	17
TOTAL	25

French

Literature—15 hours

FR 211 (or 216H) Critical Reading of French Literature	
FR 310 French Literature from the Middle Ages to the 17th Century	
FR 311 French Literature from 1700 to 1848	
FR 312 French Literature from 1848 to the Present	

³All students who desire a teaching certificate in a foreign language must request an advisor in the Department of Language Education.

⁴These courses may be taken only by application, which must be made no less than one month prior to registering (early or regular) for the first (335) of the two-quarter sequence

Culture—5 hours

- FR 410 French Culture and Civilization or
- FR 411 France Since 1968

Language—20 hours

- FR 210 (or 215H) French Conversation and Composition
- FR 306 French Conversation and Composition
- FR 503 Oral French for Teachers (Required)
- FR 507F Applied French Linguistics (Required)
- FR 556 Advanced Syntax and Composition
- FR 557 French Phonetics

German**Literature—10 hours**

- GER 201 Introduction to German Literature I
- GER 202 Introduction to German Literature II

Culture—5 hours

- GER 310 Literature and German Culture

Language—10 hours

- GER 210 Conversation and Composition
- GER 410 Advanced Composition and Conversation

Electives in German—15 hours**Latin**

- LAT 101 Elementary Latin I—5 hours
- LAT 102 Elementary Latin II—5 hours
- LAT 203 Intermediate Latin—5 hours
- LAT 304 Readings in Latin Poetry—5 hours
- LAT 420 Advanced Readings in Latin—5 hours
- Electives—15 hours

Spanish**Literature—15 hours**

- SP 211 (or 216H) Critical Reading of Spanish Literature
- SP 310 Spanish Literature from the Middle Ages to 1700
- SP 311 Spanish Literature from 1700 to the Present
- SP 312 Spanish American Literature to the End of the 19th Century
- SP 313 Spanish American Literature from the End of the 19th Century to the Present

Culture—5 hours

- SP 410, Spanish Culture and Civilization or
- SP 411, Spanish American Culture and Civilization

Language—20 hours

- SP 210 (or 215H) Spanish Conversation and Composition
- SP 306 Spanish Conversation and Composition
- SP 503 Oral Spanish for Teachers (Required)

- SP 507S Applied Spanish Linguistics (Required)

- SP 556 Advanced Spanish Syntax and Composition

- SP 557 Spanish Phonetics

Mathematics Education

The program leads to secondary mathematics certification in Georgia, grades 7-12 if all other requirements of the Georgia Department of Education are met. Students should consult an advisor in the Department of Mathematics Education as early as possible in their program of study.

Freshman and Sophomore Years

	HOURS
ENG 101, 102	10
ENG 231G or CML 221	5
ENG 232G or CML 222 or SPC 108	5
MAT 109 or 116 ¹	5
MAT 253, 254, and 255	15
Laboratory Sciences (2 course sequence):	10
Suggested Options: BIO 101-101L, 102-102L; PCS 127-127L, 128-128L or 137-137L, 138-138L; CHM 121 and 121L, 122 and 122L; GLY 125-125L, 126-126L; GGY 120-120L, 121-121L	
Mathematics or Science elective:	5
Suggested Options: MAT 256, STA 200 or 221, CSC 500, PHY 110, or any laboratory science	
HIS 111, 112 or 251, 252	10
POL 101	5
Social Science Electives:	5
Suggested Options: SOC 105, ANT 102, PSY 101, GGY 101, ECN 105	
EFN 303 or EPH 380	5
Fine Arts Elective:	5
Suggested Options: DRA 300, MUS 300, ART 300, EIA 332	
HED 171	3
PEB 100-165	5

Junior and Senior Years

All courses selected in the teaching field must be approved by the student's advisor.

Students must complete 9 upper division teaching field courses, including at least 2 courses in geometry, 3 courses in algebra (including at least 2 in sequence), and one course on computer usage.

¹Highly qualified students may begin their college mathematics with MAT 253. Approval of an advisor required.

Professional Education

	HOURS
EPY 304 Learning and Motivation	5
EMT 335 Secondary School Mathematics Curriculum	5
EMT 336 Teaching Procedures in Secondary School Mathematics	5
EMT 345 School Practicum in Secondary Mathematics	1
EMT 546S Student Teaching in Secondary School Mathematics	15
EMT 499 Research Seminar in Mathematics Education	5
EXC 500 ¹ Introduction to Exceptional Children	5

A minimum grade of C is required in each mathematics course and in each education course. Each student is responsible for maintaining contact with his/her mathematics education department advisor.

Science Education

Programs in science education lead to certification to teach a science area in the secondary school or in grades seven, eight, and nine if all other requirements of the Georgia Department of Education are met. Students should consult an advisor in the Department of Science Education as early as possible in their program. Course option, sequences, and prerequisites require different scheduling for each area of specialization.

Freshman and Sophomore Years

	HOURS
ENG 101 and 102	10
POL 101	5
EFN 303, EPH 380, or ESC 441	5
MAT 100 and 116	10
CHM 121 and 121L and 122 and 122L	10
CHM 240 and 240L or 340 and 340L	5
CML 221 and 222 or SPC 108	10
HIS 111 and 112	10
PSY 101	5
MAT 253 or STA 200 or 421	5
PCS 127-127L and 128-128L	10
BIO 101-101L or 111-111L, 102-102L or 112-112L	10
PEB 100-165	5

Junior and Senior Requirements

Science specialization (described below)	30-45
ART 300 (or approved option)	5

EPY 304 Learning and Motivation	5
HED 171 Principles of Personal Health	3
ESC 345A School Practicum in Science Education	1
ESC 445 Science Curriculum for the Secondary School	5
ESC 446 Methods of Teaching Science in the Secondary School	5
ESC 546 Student Teaching in Science Education	15
ESC 503 Teaching Science to Students With Special Educational Needs	5
Electives (hours depend upon specialization)	

Teaching Field Requirement

Basic Science Core—35 hours	
Biology	10
Physical Sciences (Chemistry, Physics, and Geology)	25
Biology Specialization—45 hours	
Organic Chemistry	5
Introductory Biochemistry	5
Genetics	5
Cellular or Developmental Biology	5
Ecology or Evolutionary Biology	5
Laboratory Courses	10
Organismic Biology	10
Chemistry Specialization—36-46 hours	
General Physics	5
Advanced Mathematics	10
Analytical Chemistry	5-10
Organic Chemistry	10-15
Physical Chemistry	6
Physics Specialization—42-44 hours	
Cellular Physics	5
Advanced Mathematics	10
Physical Optics-light	5
Mechanics	5
Electricity and Magnetism	5
Modern Physics	8-10
Thermodynamics	4
Earth-Science Specialization—40 hours	
Earth Structure and Landform	15
Earth History	10
Earth Atmosphere	5
Hydrosphere	5
Astronomy	5
General Sciences Specialization (Grades 7-8-9 only)—40 hours	
Physical Geology	5
Historical Geology	5
Weather and Climate	5
Astronomy	5
Science Elective Courses	20
Electives	0-10

Total Hours	196
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¹Required for certification in Georgia.

Social Science Education

The following programs lead to secondary social science certification in Georgia, grades 7-12 if all other requirements of the Georgia Department of Education are met. In Georgia there are two types of certification, broad field social science and single discipline. Broad field social science certification covers four subjects—economics, geography, history, and political science. Single discipline certification includes economics, geography, history, and political science.

Program 1 below leads to single discipline certification. It consists of 75 hours: 35 hours in general social sciences and a 40 hour major in a single discipline.

Programs 2 and 3 below lead to broad field certification in social science. They consist of 85 hours: 55 hours in specified social science courses and 30 hours in single discipline, area studies, or related field. Program 2 is broad field certification with a single discipline; Program 3 is broad field certification with an area studies or other multidisciplinary approach. The general and professional education requirements are common to the three programs. Details of the various programs may be obtained from the Undergraduate Advisor, Department of Social Science Education. Admission to the program in Social Science Education requires a cumulative grade point average of 2.5.

Freshman and Sophomore General Requirements

	HOURS
ENG 101, 102	10
Literature	10
CLC 120, 121; CML 221, 222; ENG 231G, 232G; or any foreign language literature, such as GER 201, 202 or RUS 401, 402	
Mathematics	10
STA 200	
MAT 100	
Science (10 hour laboratory sequence)	10
GGY 120-120L	
GGY 121-121L	
GGY 122-122L	
Arts, Drama, or Music	5
ART 300	
DRA 300	
MUS 300	
PEB 100-165	5
	50

Professional Education Requirements

EPH 380 Introductory Philosophy of Education or EFN 303 Introduction to Education	5
EPY 304 Learning and Motivation	5
The above may be taken in the sophomore or junior years, concurrently or in separate quarters, as field based or non-field based courses.	
ESS 335 Basic Curriculum in Social Science	5
ESS 336 Teaching Procedures in Social Science	5
ESS 345AB School Practicum in Social Science Education ¹	2
ESS(EAV) 401 Basic Instructional Media Competencies	3
ESS 337 Research Evaluation and Measurement in Social Science Education	5
ESS 546 Student Teaching in Social Science Education	15
ESS 555 Teaching Social Science to Students with Special Education Needs	5
	50

Social Science and History Courses

	Programs		
	1	2	3
Core Requirements	35	55	55
HIS 111, 112		10	10
HIS 251, 252	5	10	10
Behavioral Science	5	5	5
ANT 102			
PSY 101			
SOC 105			
POL 101	5	5	5
GGY 101 or 102		5	5
ECN 545		5	5
Additional Social Science Hours for Programs 2 and 3 must be selected from:		15	15
ECN 133			
ECN 437			
GGY 101 or 102			
GGY 341			
GGY 358			
POL 202			
POL 203			

¹ESS 335, 337, and 555 are taken two quarters prior to student teaching. ESS 336, 345AB and 401 are taken the quarter prior to student teaching.

Additional Social Science hours
for Program 1 may be selected
from any of the preceding
courses and: 20

PSY 258
PSY (SOC) 373
SOC 111
ANT 405
ANT 310

*Single Discipline Certification, Program 1, and
Broad Field Certification and a Discipline, Pro-
gram 2*

Behavioral Science (Anthropology, Sociology,
and Psychology)

	—	30	—
Anthropology	—	30	—
Economics	40	30	—
Geography	40	30	—
History (American or World Options)	40	30	—
Political Science	40	30	—
Psychology	—	30	—
Sociology	—	30	—

*Broad Field Certification and Area Studies and
Other Multidisciplinary Programs, Program 3
(25 hours in history and social sciences, 10 in
related subjects)*

African Studies	—	—	30
American Studies—General	—	—	30
American Studies—Afro- American	—	—	30
American Studies—The South	—	—	30
Asian Studies	—	—	30
European Studies	—	—	30
Latin American Studies	—	—	30
Analysis of Public Issues	—	—	30
Philosophy and Religion	—	—	30
Environmental Education	—	—	30
Other Advisor Approved	—	—	30

Electives	22	12	12
Total Hours	195	195	195

Speech Education¹

This program trains a student for a professional
four-year certificate in Georgia to teach speech
and English in secondary schools.

¹Preparation in English is provided in this program so
that the teaching major is Speech/English.

Freshman and Sophomore Years (Core Program)

	HOURS
ENG 101, 102	10
ENG 231G, 232G	10
Mathematics	5
Lab Science Sequence	10
Math/Science Elective	5
Social Sciences	20
SPC(MAN) 109	5
EFN 303S	5
EXC 500	5
DRA 300	5
SPC 108	5
Foreign Language	10
PEB 100-165	5
TOTAL	100

Junior and Senior Years²

Teaching Field:	
SPC 250 Public Speaking or SPC 210 Voice and Diction	5
SPC(MAN) 256 Discussion Methods	5
SPC 350 Argumentation and Debate	5
EEN 506 Literature Study in the Secondary Schools	5
ENG, British Literature	5
ENG, American Literature	5
EEN 509 Composition in the Elementary and Secondary School	5
EEN(LIN) 507 English Language Studies for Teachers	5
DRA 488 Readers' Theater	5
DRA 530 Play Production for the High School Teacher	5
JRL 301 Introduction to Broadcasting or JRL 384 Basic Radio — TV — Film Production	5
TOTAL	55

Professional Education³

ERD 403 Teaching Reading in the Second- ary School	5
EEN 335 English Curriculum in Secondary Schools	5

²All students who desire a teaching certificate in
Speech/English must request an advisor in the Depart-
ment of Language Education.

³A 30-hour sequence will be taken during a two-
quarter assignment to a public school field center. This
sequence may be taken only by application, which must
be made no less than one month prior to registering (early
or regular) for the first of these two quarters. No other
work may be undertaken during these two quarters.
Consult the department's "Selection Retention Pro-
cedures" statement for specific criteria.

ESP 336 Teaching Procedures: Speech	5
EEN 546 Student Teaching in English or	
ESP 546 Student Teaching in Speech	
Education	15
TOTAL	30

Other Courses:	
EPY 304 Learning and Motivation	5
Foreign Language or Cross-Cultural	
Course	5
TOTAL	10

School Media Specialist

Undergraduate and graduate programs are available in educational media and librarianship. By taking 40 quarter hours (approved by the Department of Educational Media and Librarianship) including a 5-hour internship in a school media center, a student may satisfy requirements for the MS-4 media specialist certificate if all other requirements of the Georgia Department of Education are met. The T-4 is a prerequisite for the MS-4. With the approval of faculty advisors, some of these courses may be taken as electives during the junior or senior years or completed on a post-baccalaureate basis. Additional media and library courses are offered on the graduate level leading to an M.Ed. degree and a professional MS-5 media specialist certificate.

PROGRAMS FOR TEACHERS OF EXCEPTIONAL CHILDREN

Speech Pathology and Audiology

The speech pathology and audiology programs meet the curricular requirements for either the Certificate of Clinical Competence in Speech Pathology or Audiology of the American Speech and Hearing Association or the T-5 teaching certificate of the Georgia Department of Education if all other requirements of the Georgia Department of Education are met. Students entering this curriculum receive a Bachelor of Science degree after four years of successful study but must complete an additional fifth year or meet the Master of Education requirements in order to enter professional work as a speech pathologist, audiologist or teacher of the hearing impaired. This program is appropriate as pre-professional training for the three graduate degree programs.

Bachelor's Degree in Speech Pathology (pre-professional)

Freshman and Sophomore Years

	HOURS
ENG 101, 102	10
SPC 108 or SPC(MAN) 109	5
POL 101	5
BIO 101-101L, 102-102L or	
PCS 127-127L, 128-128L	10
MAT 100 or 109	5
EFN 303 with School Practicum	5
Physical Science or Mathematics	5
HIS 251 or 252	5
Humanities	10
SOS 104, ECN 105, SOC 105, or ANT 102	5
PSY 101	5
SPC 209	5
SPC 210	5
SPA 310	5
PEB 100-165	5

Junior and Senior Requirements

EPY 304	5
HED 171 or 344	3
ERD 401 or EEN(LIN) 500	5
EXC 500	5
PSY 258 or 423	5
SPA 546	15
CFD(PSY) 395	5
SPA 412, 413, SPA(LIN) 414S, SPA 471, 474, 475, 476, 534, 538, SPA (PSY/LIN) 450	45
SPA 501, 502, 503, 511; or SPA 501, 511, 512, 513	8

Speech Pathology (Professional Degree)

A program of study leading to the Master of Education degree in Speech Pathology is offered through the Graduate School of the University. Please consult the Graduate School Bulletin for admission and degree requirements and course descriptions.

Audiology (Professional Degree)

There is no program leading to an undergraduate degree in audiology. All programs are at the master's level and above. For further information, see the Graduate School Bulletin.

Hearing Impaired (Professional Degree)

There is no program leading to an undergraduate degree in the area of hearing impaired. All programs are at the master's level and above. For further information, see the Graduate School Bulletin.

Teaching Mentally Retarded Children

Freshman and Sophomore Years

	HOURS
ENG 101, 102	10
MAT 100, 205, or other advanced course	5
POL 101	5
Biological or Physical Science (Lab required)	10
HIS 251 or 252	5
PEB 100-165	5
Math or Science (approved elective)	5
Social Sciences (approved electives)	10
Humanities (approved electives)	10
Electives (General)	15
EFN 303 or EPH 380	5
EPY 304	5
CFD(PSY) 395 or 408 or EPY 401	5
PSY 258	5
EIA 332 or ART 305	5

Junior and Senior Years

	HOURS
EXC 500, 501, 504, 506 or 507, 508, 595	30
EXC 546BS Student Teaching in Special Education	30
EEN(LIN) 500 Language Acquisition and Development or SPA 451 Speech and Language Problems in the Classroom	5
ERD 401 The Teaching of Reading	5
EMT 501 Teaching Mathematics in the Elementary School	5
PED 361 Adapted Physical Education or PED 307 Physical Education in the Elementary School	5
EXC 509BS Practicum in Speech Education	10
HED 171 Principles of Personal Health or HED 344 Health and Safety in Middle School	3
Electives from Area of Concentration	15

Teaching Multi-handicapped Children

There is no program leading to an undergraduate degree in the multi-handicapped area. All programs are at the master's level and above. For further information, see the Graduate School Bulletin.

Teaching Emotionally Disturbed Children

There is no program leading to an undergraduate degree in the emotional disturbance area. All programs are at the master's level and above. For further information, see the Graduate School Bulletin.

Teaching Children With Learning Disorders

There is no program leading to an undergraduate degree in the area of learning disorders. All programs are at the master's level and above.

For further information, see the Graduate School Bulletin.

VOCATIONAL EDUCATION

The programs in the overall area of Vocational Education lead to professional teacher certification in the teaching fields of agricultural education, comprehensive business education, accounting-business management, business data processing-accounting, distributive education, industrial arts, home economics education, health occupations education, and trade and industrial education if all other requirements of the Georgia Department of Education are met. A program leading to provisional certification for coordinators of diversified cooperative training is also available, and a program leading to provisional certification for directors of vocational education which may be changed to professional status at the graduate study level may be planned.

Agricultural Education

This program leads to the degree Bachelor of Science in Agriculture in the College of Agriculture. (See College of Agriculture.)

Business Education

Freshman and Sophomore Years

	HOURS
ENG 101, 102	10
POL 101	5
MAT 100 or 109	5
BIO 101-101L, 102-102L or BOT 121-121L, 122-122L	10
EFN 303	5
Physical Science ¹	5
CML 221, 222 or ENG 231G, 232G	10
HIS 251 or 252	5
PSY 101	5
ECN 105, 106	10
ACC 110, 111	10
PEB 100-165	5
EIA 332, ART 300, or MUS 300	5
HED 171	3

Junior and Senior Requirements (Concentration Areas)

Three undergraduate programs in business education are available. The comprehensive

¹GGY 104, 121-121L; CHM 121 and 121L; GLY 125-125L; PCS 127-127L; or PSC 101

business education curriculum is designed to prepare students to teach *all business subjects*, the accounting-business management curriculum is designed to prepare students to teach *basic business subjects*, and the business data processing-accounting curriculum is designed to prepare students to teach *business data processing and related subjects*. A student will be certified in one of these major concentrations if all other requirements of the Georgia Department of Education are met.

I. Comprehensive Business Education	
EPY 304	5
EAV(ESS) 401	3
EBE 335, 336	10
EBE 546	15
EBE 301, 302	10
EBE 305	5
EBE 310, 311, 401	15
EBE 507, 508, 512, 576	20
BL 270-270L or 370	5
Business Core ¹	5
Special Education 500	5
Electives	5

II. Accounting-Business Management	
EPY 304	5
EAV(ESS) 401	5
EBE 335, 336, 512	15
EBE 546	15
EBE 305	5
EBE 311, 401	10
EBE 507, 508, 576	15
ACC 310 or 500	5
BL 270-270L or 370	5
FIN 330	5
MAN 351	5
MKT 360	5
EBE 509	5
EVO 555 or EXC 500	5
Electives	5

III. Business Data Processing-Accounting	
EPY 304	5
EAV(ESS) 401	3
EBE 305	5
EBE 311	5
EBE 335, 336	10
EBE 546	15
EBE 401	5
EBE 507, 508, 512, 576	20
EBE 509, 510	10
ACC 310 or 500	5
MAN 351, 560	10
BL 270-270L or 370	5
EVO 555 or EXC 500	5
Electives	5

¹MKT 360, MAN 351, FIN 330 or INS 381

Distributive Education

Freshman and Sophomore Years

	HOURS
ENG 101, 102	10
MAT 100	5
BOT 121-121L, 122-122L; or 10 hours sequence lab science	10
POL 101	5
SPC 108	5
ART 120 or 300	5
EFN 303	5
PCS 101	5
CML 221 or ENG 231G, 232G	5
PSY 101	5
ECN 105, 106	10
EDE 100	5
HIS 251 or 252	5
PEB 100-165	5
HED 171	3
Approved electives	12
EDE 200 or approved work experience	5

Junior and Senior Requirements

EPY 304	5
EDE 301	5
EDE 335, 336	10
EDE 546	15
EVO 503	5
BL 270-270L or ECN 386	5
MKT 360	5
MKT 560	5
MKT 563 or 567	5
MKT(PSY) 561 or MKT 565	5
MKT 564	5
MAN 351	5
SOC (Advisor's Approval)	5
EAV(ESS) 401, EAV 500 or 501	3-5
EVO 555	5

Health Occupations Education²

This program is designed for persons who hold credentials as health practitioners and/or equivalent experience in a clinical health specialty area, who wish to qualify for credentials as educators. Admission to the program requires current registration (licensure or certification) in a health profession, where applicable, and documentation of work experience in the health field, sufficient to meet the provisions of the Georgia State Plan for Vocational Education.

²Note: Health professionals whose credentials are based upon satisfactory performance on a national certifying examination may qualify for advanced standing. (See "Teaching Field")

General Education Course Requirements

Humanities	HOURS
ENG 101-102	10
Electives (English, Romance Language, Philosophy, Religion, Art, Speech)	10
Mathematics and Science	
MAT 100 or 101	5
Lab Science (BIO 101-101L 102-102L)	
CHM 111 and 111L, 112 and 112L, 121 and 121L, 122 and 122L; GLY 125-125L, 126-126L	
PCS 101, 127-127L, 128-128L	
GGY 104, 120-120L, 121-121L and/or	
Health-related Science (anatomy and physiology; microbiology; bacteriology; pathology; nutrition and diet therapy)	20
Social Sciences, including, but not limited to, American history and American government and the behavioral sciences	20
PEB 100-165	5
Subtotal	70

Teaching Field Course Requirements

Teaching Field	25
Occupational competence will be determined by proficiency examination. ¹ Credit is limited to 25 quarter hours, recorded as follows:	
EVO 526 Basic Theory in Vocational Education	
EVO 527 Basic Theory in Vocational Education	
EVO 528 Basic Theory in Vocational Education	
EVO 529 Basic Theory in Vocational Education	
EVO 530 Basic Theory in Vocational Education	

¹In addition, transcripts from preparatory programs in health specialties must reflect at least 250 instructional hours related to occupational competence.

Clinical Science: 15-45

Credit for clinical sciences will be based on formal coursework in excess of that pertaining to basic competence. Credit may not exceed 15 quarter hours per academic year of the basic preparatory health program, up to a maximum of 45 quarter hours for a three-year program. Credit will be recorded as follows:

EHO Basic clinical science
EHO Intermediate clinical science
EHO Advanced clinical science

Electives:

From health-related and/or behavioral sciences 30-40
Subtotal 70

Professional Education Course Requirements

EAV 500 Utilization of Educational Media or EAV 501 Design and Production of Educational Media	5
EPY 304 Learning and Motivation	5
EHO 500 Performance Specification — Health Occupations	5
Electives selected from the following:	25
EHO 400 Special Problems in Health Occupations Education	
EHO 345BC School Practicum in Health Occupations Education	
EHO 546 Student Teaching in Health Occupations Education ²	
EHO 503 Instructional Planning in Health Occupations Education	
EHO 501 Instructional Strategies in Health Occupations Education	
EVO 505 Problems of Teaching Vocational Education	
EVO 503 Coordination of Cooperative Vocational Education Programs ³	
SPECIAL REQUIREMENTS	5
EVO 555 Teaching Vocational Education to Students with Special Education Needs or EXC 500 Introduction to Exceptional Children	
Subtotal	55

TOTAL REQUIREMENTS B.S. Ed. 195

¹Note: Health professionals whose credentials are based upon satisfactory performance on a national certifying examination may qualify for advanced standing. (See "Teaching Field")

²Required for a teaching certificate

³Recommended for Co-op Teachers as a pre-service course

Home Economics Education

This program leads to the degree Bachelor of Science in Home Economics in the College of Home Economics. (See College of Home Economics.)

Industrial Arts Education

Freshman and Sophomore Years

	HOURS
ENG 101, 102	10
MAT 100	5
POL 101	5
SPC 108	5
HIS 111 or 251	5
Laboratory Science	10
EFN 303 or EPH 380	5
EPY 304	5
EIA 100	5
EIA 101, 102	10
EIA 305	5
EIA 310	5
EIA 315	5
EIA 320	5
EIA 326	5
PEB 100-165	5

Junior and Senior Requirements

PSY 101	5
HIS 112 or 252	5
Humanities (see Area I, Core Curriculum)	5
HED 171	3
Sociology	5
EAV 500 or 501	5
EIA 300	5
EIA 328	5
EIA 330	5
EIA 335, 336	10
EIA 546	15
EIA 502	5
EIA 504	5
EAV(EIA) 521	5
Approved electives	12
EXC 500 or EVO 555	5

Trade and Industrial Education

This program leads to professional certification as coordinators of diversified cooperative training and teachers of trade and industrial subjects.

Before a graduate is recommended for a professional certificate in this field, the applicant must furnish evidence of work experience in amount and kind which will satisfy provisions of the Georgia State Plan for Vocational Education.

Freshman and Sophomore Years

	HOURS
ENG 101, 102	10
SPC 108	5
HIS 251 or 252	5
POL 101	5
MAT 100	5
Laboratory Science	10
PSY 101	5
English or Humanities Electives	10
Social Science Electives	10
Mathematics or Science Electives	5
EFN 303	5
HED 171	3
EPY 304	5
PEB 100-165	5
EVO 555 or EXC 500	5

Junior and Senior Requirements

	HOURS
ETI 335, 336, 546	25
ETI 500, 501, 502, 503, 505, 508 ¹ , 511	30
Electives, ETI 400, 504, 506, 509, 510	15
Technical Electives, EVO 526, 527, 528, 529, 530 ²	25
Approved electives	10

COURSES OF INSTRUCTION

EDUCATION (EDU)

Honors Courses

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses offer Honors students of senior division standing the opportunity to engage in individual study, readings or projects under the direction of a project director.

¹Required for Diversified Cooperative Training Coordinators.

²See course description listed under Vocational Education. NOTE:

(a) Technical school graduates and others with competency in an occupation may be granted advanced standing (up to 25 quarter hours) by successful completion of a competency examination. This is to be classified as technical electives.

(b) EPY 304, ETI 501, or ETI 335, and ETI 502 or ETI 336 must be completed and admission to teacher education gained before ETI 546 and 349 can be scheduled (75 quarter hours of work must have been completed).

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

ART EDUCATION (EAR)

(For other courses, see "Art Education," Art Department, College of Arts and Sciences)

335. Basic Curriculum in Art Education. 5 hours. Five 2-hour lab periods.

Prerequisite: Admission to Art Education sequence, Teacher Education Program, and a 2.7 average in the major.

Planning and developing procedures for implementing curriculum at the elementary level. An investigation into the literature, materials and procedures appropriate to children at different developmental levels.

336. Teaching Procedures in Art Education. 5 hours. Five 2-hour lab periods.

Prerequisite: Admission to Art Education sequence, Teacher Education Program, and a 2.7 average in the major.

Planning and implementing art instruction for the secondary level students. Specific teaching procedures, materials and techniques developed from Art Education philosophy and research.

345ABC. School Practicum in Art Education. 1 hour each.

400. Special Problems in Art Education. 1-10 hours.

Prerequisite: Senior division standing and permission of department and advisor.

Specialized training appropriate to the individual, involving intensive investigation and analysis into specific problems of Art Education.

499. Research Seminar in Art Education. 1-10 hours.

Prerequisite: Permission of department.

A seminar with supervised practice designed to introduce art education majors to various community institutions.

546. Student Teaching in Art Education. 1-15 hours.

Prerequisite: Admission to Teacher Education Program, EAR 335 and 336, and a 2.7 average in the major.

The student teacher is placed for a quarter in an approved school and supervised in the actual teaching of art.

COUNSELING AND HUMAN DEVELOPMENT SERVICES (ECP)

399. Career Development for Life Planning. 2-3 hours.

Offers an opportunity for receiving information and developing skills necessary for effective career decision making. Processes of self assessment, occupational exploration, and preparation for employment are explored. In addition to traditional classroom activity, content is presented in an experiential manner through field trips, observations, role playing, simulation, individualized projects, and contact with resource experts.

400. Special Problems in Counseling and Human Development Services. 1-10 hours.

Prerequisite: Permission of department.

The topic(s) of this course is arranged for individuals or groups to accommodate the study of current philosophical, psychological, sociological, and developmental trends, unique interests, special training needs and research efforts of students. The course may be taught as an independent study for an individual or group, or as a formal class for all students.

402. Interpersonal Relationships. 5 hours.

Prerequisite: Two undergraduate courses in PSY or EPY.

Interpersonal skills are taught and demonstrated by the instructor. Students practice the skills in role playing situations. Skills included are: physical attending, psychological attending, listening, perceiving surface and underlying feelings, basic responding skills, personalizing skills and initiating skills.

499. Research Seminar in Counseling and Human Development Services. 1-10 hours.

Prerequisite: Permission of department.

A research seminar for master's level students dealing with proposed psychological, vocational, educational, and developmental programs and projects.

500. Fundamentals of Guidance in Elementary and Secondary Schools. 5 hours.

An introduction to professional training for counselors and an opportunity for teachers to acquire an overview of guidance and counseling functions in the school program.

501. Individual Appraisal. 5 hours.

Principles of testing, types of scores, use of instruments and methods of assessing abilities, achievement levels, interests, attitudes, developmental variables, vocational skills, and personality characteristics. Use of test and non-test data in guidance and counseling.

DRAMA EDUCATION (EDR)

335. Curriculum and Methods in Drama Education: K-8. 5 hours.

Prerequisite: Accepted in the Curriculum Sequence in Drama Education.

Planning and developing procedures for implementing curriculum in Drama at the early childhood and middle school level. An investigation into the literature, materials and techniques appropriate for children at different developmental levels.

336. Curriculum and Methods for Drama Education in the Secondary School and the Community. 5 hours.

Prerequisite: EDR 335. Accepted in the Curriculum Sequence in Drama Education.

Planning and developing procedures for implementing the use of drama as an art and a therapy in the secondary schools and in other community agencies with an educational function.

546. Student Teaching in Drama Education. 1-15 hours.

Prerequisite: EDR 335 and EDR 336. Accepted in the Curriculum Sequence in Drama Education.

The student is placed for a quarter in an approved professional laboratory situation and supervised in the practical application of drama education skills.

EARLY CHILDHOOD EDUCATION (ECE)

302. Orienting Practicum. 2-6 hours.

Short term (20-30 hours) field experience during which the student will observe and become minimally involved in the teaching/learning processes of each of the levels of early childhood education (nursery, kindergarten, and primary) coupled with occasional scheduled seminars.

333. Primary School Program and Curriculum Development. 5 hours.

343. Teaching and Learning Strategies I. 3 hours.

An examination of the naturally occurring behavior of young children. Students will be given extensive practice in developing skills in observation leading to accurate, objective recording and measurement of children's behavior.

400. Special Problems in Early Childhood Education. 1-10 hours.

Selected students are permitted to secure spe-

cialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation in a special field or the collection and analysis of original data pertinent to a given problem.

442. Organization of Early Childhood Classrooms. 5 hours.

Prerequisite: EPY 403, EXC 500. Course in Child Development.

Investigation of early childhood education principles and practices which are germane to organizing and operating the classroom for learners in grades Kindergarten through Grade 4. Students will acquire knowledge of important theoretical approaches in this area as well as practical skills applicable to their work with young children.

500. Early Childhood Education. 5 hours.

Study of facilities, equipment, organization and administration of curricula in early childhood education.

501. Current Trends in Early Childhood Education. 5 hours.

Interdisciplinary factors and research in the education of children ages three to eight.

505. Problems of Teaching in Early Childhood Education. 5 hours.

Prerequisite: Four courses in education. Instructional procedures and evaluation in terms of public growth.

510. (EMS/EXC) Teaching Special Needs Students in Regular Classroom. 5 hours.

Prerequisite: EXC 500.
The course emphasizes development of behavioral objectives, curriculum choices, instructional strategies, materials, and evaluation procedures to be matched with educational profiles of special needs students in regular education classrooms. Team taught by regular educators and special educators.

546. Student Teaching in Early Childhood Education. 1-15 hours.

EDUCATIONAL MEDIA (EAV) AND LIBRARY EDUCATION (ELE)

(EAV)

400. Problem in Educational Media. 1-10 hours.

Prerequisite: Permission of department.
Independent study of selected problems in media.

401. (ESS) Basic Instructional Media Competencies. 3 hours. Two 2-hour lab periods.

Prerequisite: Junior/Senior standing.

Introductory laboratory course: including operation of audio-visual equipment, sources, selection, and preparation of instructional materials.

405. Selection and Utilization of Interactive Instructional Materials. 5 hours. Four hours lecture and one 2-hour lab period.

Prerequisite: EAV 500 or permission of department.

Selection and utilization of existing interactive instructional materials with emphasis on the varied formats and techniques used in computer-based instruction.

500. Utilization of Educational Media. 5 hours.

Survey of educational communications media and technology; characteristics of media, the teaching/learning process, school media programs; sources evaluation and utilization of media teaching.

501. Design and Production of Educational Media. 5 hours.

Laboratory course in design and production of instructional media: transparencies, slides, tapes and other media for instruction.

502. Educational Television Production. 5 hours.

Prerequisite: EAV 501 or permission of department.

Design, production, and use of videotapes. Laboratory experiences with closed circuit, portable television equipment suitable for school use.

503. Educational Media Production, Advanced. 5 hours.

Prerequisite: EAV 501 or permission of department.

Instructional design of media materials including various types of graphic, photographic, and audio materials.

520. (EIA) Photography in Instruction. 5 hours. Three lectures, two 2-hour lab periods.

Prerequisite: EAV 501 or permission of department.

Basic principles, skills, and techniques of photography and their application to problems of instruction. Areas covered include introductory skills in camera and film use, dark-room procedures, processing and printing in black and white and color. Course designed for educational media, industrial/graphic arts, and other majors in education. Enrollment limited. Students must supply own materials.

521. (EIA) Graphic Technology. 5 hours. Three lectures, three 2-hour lab periods.

Prerequisite: Permission of department.

Demonstrations, lectures and laboratory sessions designed to provide majors in Educational Media and Industrial Arts with competencies in graphic technology. Emphasis is placed on layout, image assembly, photo conversion, platemaking, offset and screen printing, binding, finishing.

522. (EIA) Advanced Graphic/Photographic Techniques. 5 hours.

Prerequisite: EAV(EIA) 520 or 521 or permission of department.

An advanced projects course in graphic and photographic production. Through lectures, demonstrations and lab experiences students will develop advanced graphic/photographic techniques for the production of educational materials.

(ELE)

102. Library Orientation and Instruction. 5 hours.

Familiarization with basic reference materials and other sources of information, techniques of search strategy, and development of skills for effective use of library.

402. Reference Materials and Services. 5 hours.

Nature of reference services and knowledge of all types of materials; content, evaluation, organization, and utilization.

403. Technical Services. 5 hours.

Aims and techniques for organizing a media collection. Includes introductory classification of materials, descriptive cataloging, use of preprinted catalog cards, centralized acquisition and processing services, procedures and operations essential for internal organization of the media center.

404. Administration of School Media Center. 5 hours.

Study of the organization, services, functions, and administration of the school media center.

501. Building Library Media Collections. 5 hours.

A study of media selection aids, book reviewing, reading lists, publishers, and publishing; standards useful in building and balancing a collection; methods of reading guidance.

570. Internship in School Media Center. 5 hours.

Practicum in selected school media centers under the supervision of college staff and qualified personnel in school. Required of

students without school media center experience to meet initial certification requirements.

EDUCATIONAL PHILOSOPHY (EPH)

380. Introductory Philosophy of Education. 5 hours.

Designed to get students to think critically and analytically about fundamental issues in education. The first part of the course acquaints students with the various types of philosophy and philosophy of education. Attention is given to speculative, normative, and analytical philosophy. Rationalism and empiricism are contrasted and sub-schools of each are examined. Special attention is given to logic and to methods of critical analysis. The second part of the course is devoted to critical analysis of such concepts in education as teaching, learning, educating, education, ends, means, aims, values, democracy, and knowledge.

528. (SOC) Sociology of Education. 5 hours. Social perspectives on education: the society, the community, and the school.

EDUCATIONAL PSYCHOLOGY AND MEASUREMENT (EPY) AND EDUCATIONAL RESEARCH (ERS)

(EPY)

304. Learning and Motivation. 5 hours.

Prerequisite: Junior or higher standing. Learning theory and processes of both students and teachers, dimensions of motivation related to learning and performance.

305. Adolescent Psychology. 5 hours.

Prerequisite: EPY 304 or equivalent. Interests, needs, and abilities of adolescents; evaluation of their total development.

400. Special Problems in Educational Psychology. 1-10 hours.

May be independent study with variable credit with consent of instructor or assembled class especially developed to study some problem or set of problems in educational psychology with specified credit and prerequisites.

401. Psychology of Early Childhood. 5 hours.

Prerequisite: EPY 304 or equivalent. Interests, needs, and abilities of children; evaluation of their total development.

402. Sex Differences and Sex-Role Stereotyping. 5 hours.

Prerequisite: EPY 304, EPY 305, or equivalent. Sex differences and similarities from biological and psychological viewpoints and their interrelatedness with the education process.

500. Educational Tests and Measurements. 5 hours.

Prerequisite: Four courses in education. Nature and function of measurement in education. Teacher-made and standardized tests and scales. Introductory statistical concepts of measurement.

506. Classroom Learning Problems of Disadvantaged Children. 5 hours. Four hours lecture; two hours lab.

Prerequisite: EPY 304 or equivalent. Psychological characteristics of economically, culturally, and educationally disadvantaged children and youth, special classroom learning problems, and classroom learning problems in integrated schools.

511. Characteristics of Gifted Children and Youth. 5 hours.

Prerequisite: EPY 304 or equivalent. Psychological characteristics of gifted children and youth; including studies of the lives of eminent persons, empirical studies of gifted children and youth today, and genetic studies of genius.

546. Student Teaching in Educational Psychology. 1-15 hours.

Prerequisite: Major in educational psychology.

(ERS)

400. Special Problems in Educational Research. 1-10 hours.

Independent study with permission of department.

401. Methods of Research in Education. 5 hours. Four hours lecture; two hour lab periods.

Prerequisite: EPY 304 or equivalent. Research concepts and skills and related competencies involved in the interpretation and application of reported research.

411. Applied Descriptive Statistics. 5 hours.

Four hours lecture; two hour lab periods. Interpretations and computations in descriptive statistics with emphasis on correlation and regression with brief introduction to probability and the normal distribution.

ENGLISH EDUCATION (EEN)

300. Children's Literature. 3 hours.

Literature suitable for elementary school children, stimulation of children's reading.

335. English Curriculum in Secondary Schools. 5 hours.

Planning for teaching English in secondary schools.

336. Teaching Procedures in Language Education. 5 hours.

Methods for teaching English in secondary schools.

400. Special Problems in English Education. 1-10 hours.

Prerequisite: Permission of department.

Individualized study of selected topics related to the teaching of English.

404. The Oral Language Arts—Early Childhood Education. 3 hours.

Prerequisite: ENG 101 and 102.

This course consists of two components, beginning with the study of children's language acquisition and development. This study provides the basis for the other component, techniques for teaching vocabulary development, oral discussions and listening skills, and dramatic activities.

405. The Written Language Arts—Early Childhood Education. 3 hours.

Prerequisite: ENG 101 and 102.

This course develops some basic understanding about the structure of language, its historical development, geographical and cultural variations, and grammars. It also deals with the methods and materials for teaching written skills such as composition, spelling and handwriting, and the relationship of oral and written skills to literature and reading.

500. (LIN) Language Acquisition and Development. 5 hours.

A language oriented study of the stages a child goes through in acquiring native language and the processes used in developing sophistication. Infant, childhood, and adolescent periods shown as a continuum in the native's linguistic development.

506. Literature Study in the Secondary Schools. 5 hours.

A study of literature and teaching methods appropriate for an effective secondary school literature program.

507. (LIN) English Language Studies for Teachers. 5 hours.

Instructional applications of language concepts drawn from theories of grammar, se-

mantics, dialectology, lexicography, and the history of English.

509. Composition in the Elementary and Secondary School. 5 hours.

Instruction in the modes of written expression and study of composition teaching methods.

514. Language Arts Methods in the Middle School. 5 hours.

An overview of techniques and materials for teaching language arts in the middle school grades. It introduces students to methods of teaching oral skills (discussion, drama, listening . . .) and written skills (composition, handwriting, spelling . . .).

516. Children's Literature for the Middle School. 5 hours.

Prerequisite: ENG 102.

Study of the existing body of children's literature appropriate for children in the middle school; development of criteria for book selection and of techniques for stimulation of children's interest in reading.

517. Teaching Language in the Middle School. 5 hours.

Develops basic understandings about language: language change, dialect and usage variation, and approaches to grammar. Students also develop skill in diagnosing student needs, planning instruction in language development, and evaluating growth.

519. Teaching Composition in the Middle School. 5 hours.

Focuses on teaching composition in the middle grades. Students try various writing assignments—fictional and informational writing and poetry—to develop their own writing skills, to plan assignments, and to work on developing skill in responding to children's writing.

546. Student Teaching in English. 1-15 hours.

FOREIGN LANGUAGE EDUCATION (EFL)

335. Foreign Language Curriculum in the Secondary Schools. 5 hours.

Planning for teaching foreign language in secondary schools.

336. Teaching Procedures: Foreign Language. 5 hours.

Methods for teaching foreign language in secondary schools.

400. Special Problems in Foreign Language Education. 1-10 hours.

Prerequisite: Permission of department.

Individualized study of selected topics related to the teaching of foreign languages.

501. Methods and Materials for Teaching English as a Second Language. 5 hours.

Prerequisite: Permission of department.

Objectives and approaches to teaching English as a Second Language; instructional materials and professional resources; principles of testing and interpreting student proficiency and progress; principles of evaluating materials, student methods, and curricula.

502. Theory and Practice for Teaching English as a Second Language. 5 hours.

Prerequisite: EFL 501.

Strategies for teaching advanced reading and writing skills; approaches to the teaching of patterns of American culture; curricular implications for English as a Second Language; observation and teaching practicum.

505. Teaching for Cross-Cultural Understanding. 5 hours.

Lecture and discussion in areas of cross-cultural analysis, attitudes toward other cultures, strategies for teaching culture in the language classroom and the testing of cultural insights.

510. American Language and Cultural Studies for Foreign Students. 1-5 hours.

Designed to help foreign students develop advanced English skills in understanding academic lectures, comprehending reading materials, speaking with grammatical accuracy and acceptable pronunciation, and writing for academic purposes.

546. Student Teaching in Foreign Language Education. 1-15 hours.

FOUNDATIONS OF EDUCATION (EFN)

303. Introduction to Education. 1-5 hours.

Prerequisite: Sophomore or higher class standing.

Familiarization with nature, origin, and function of education in the United States. Includes teacher-aide experience in public schools and human relations training.

303E. Introduction to Education. 5 hours.

Prerequisite: Sophomore or higher class standing.

Open only to elementary and early childhood education majors. Familiarization with nature, origin, and function of education in the United States. Includes teacher-aide experience in public schools and human relations training.

303S. Introduction to Education. 5 hours.

Prerequisite: Sophomore or higher class standing.

Open only to secondary and special education majors. Familiarization with nature, origin, and function of education in the United States. Includes teacher-aide experience in public schools and human relations training.

DIVISION OF HEALTH AND SAFETY, PHYSICAL EDUCATION, RECREATION, AND DANCE

Health Education (HED)

119. Standard First Aid and Personal Safety. 3 hours.

Instruction in fundamentals of first aid. Students who qualify receive American Red Cross certificate.

171. Principles of Personal Health. 3-5 hours.

Numerous factors affecting the personal health of the individual are considered. Topics discussed include mental health, nutrition, diet and weight control, physical fitness, smoking, human sexuality, consumer health, drugs, disease, environmental health and safety.

301. Introduction to Health and Safety. 2 hours.

Analysis of the philosophy and principles underlying the field of health and safety. Includes literature, research, organizations, scientific foundations, and employment potential.

309. Care and Prevention of Athletic Injuries. 3 hours.

Analysis of common athletic injuries, conditioning and safety practices, and taping and bandaging.

319. Advanced First Aid. 5 hours.

Problems and training in the aspects of emergency medical care required at the scene of an accident. Students who qualify may receive A.R.C. certification in advanced first aid. CPR training and certification included.

321. Issues in Health Consumerism and Self-Care. 5 hours.

Analysis of health products and services and the factors that influence personal choices in the health marketplace. Includes a discussion of the philosophy, theory and practice of self-care and health activism.

335. Basic Curriculum in Health and Safety. 3 hours.

Various methods of curriculum planning in health education, analyzing content areas, and reviewing new approaches to health teaching.

336. Teaching Procedures in Health Education. 3 hours.

Prerequisite: HED 335.

Development of instructional objectives and the examination and application of various teaching methods. Utilization of media, community resources, and student assessment techniques.

344. Health and Safety in Middle School. 1-3 hours.

Content, methods, and materials for health instruction in the middle schools. Also includes the role of the teacher in providing for health services and healthful environment.

345. Practicum in Health Education. 1-3 hours.

Individual practical experience within the school setting.

370. Community Health Organization. 5 hours.

A review of the community health programs and objectives for the recreation or social work major. Emphasis is given to creating a comprehensive approach to community health problems by involving the recreation and social worker.

400. Special Problems in Health Education. 1-10 hours.

Prerequisite: Permission of department.
Independent study in health education.

404. Introduction to the Study of Disease. 5 hours.

The systematic study of the etiology of various health problems with the focus on using this knowledge for planning preventive programs. The principles, uses, techniques, and language of epidemiology and epidemiological method are presented. Students will learn and use principles of data collection, tabulation, analysis, and presentation.

442. Health in Early Childhood Education. 1-5 hours.

Course especially designed for graduate majors in Early Childhood Education.

506. Teacher Preparation in Human Sexuality. 5 hours.

Theory and practice of family and sex education; basic issues, philosophy and guiding principles; legal implications; needs, justification and objectives; curriculum critique; content knowledge; resource materials; acceptable

methods of approach to controversial topics; micro-teaching and video tape evaluation stressing responsible classroom techniques appropriate for teaching human sexuality at various levels, grades 1-12.

511. Organization and Administration of School Health Programs. 5 hours.

The organization and administration of the total school health program is presented. Suggestions of a practical nature are presented which will enable administrators, faculty, and staff to provide a quality school health program.

512. Foundations of Health Education. 5 hours.

History, philosophy and principles directed to a working philosophy and the processes of health education. Emphasis on both school and public health education.

513. Community Health Organization. 5 hours.

Prerequisite: Upper division standing.

A study of the health organizations and other significant groups and persons within a community. Emphasis is on the development of knowledge and skills which will enable the community health professional to plan, develop, facilitate, and implement cost-effective programs in various settings and for a wide range of people or groups.

516. Current Issues in Health and Safety. 5 hours.

Drug abuse, smoking, delinquency, suicide, and others. Emphasis on the etiology of health problems and the role of parents, teachers, administrators, and the community in meeting and preventing health problems.

521. The Effects of Drug Use and Abuse. 5-10 hours.

Social, moral, psychological, and physiological causes and effects of drug use and abuse. Individual, family, and community factors related to prevention and treatment.

522. Health Care Delivery Systems. 5 hours.

Prerequisite: HED 301 and 370.

An in-depth study of the structure, role and function of existing components of our health care delivery system, and an analysis of future trends in health care delivery systems.

523. Patient Education. 3 hours.

Prerequisite: HED 171 or 370.

An in-depth study of comprehensive patient education programs. Emphasis on patient education program development, implementation, and evaluation as related to the patient management of illness and preventive health care.

546. Student Teaching in Health Education. 1-15 hours.

Safety Education (SED)

400. Special Problems in Safety Education. 1-10 hours; maximum 10 hours.

Prerequisite: Permission of department.
Independent study in safety education.

445. Industrial Safety. 5 hours.

Introduction to the specific areas and the broad scope in methods, materials, and problems in industrial safety programming with special emphasis on organization and implementation of accident prevention and control techniques.

544. Safety in Sports and Recreation. 5 hours.
Philosophy of sports safety; human and environmental factors and their interrelationships in sports injury and its control; risk-taking and decision solution strategies; application of accident prevention and injury control to selected sports; contributions of sports medicine to safety.

546. Student Teaching in Safety Education. 1-15 hours.

575. Foundations of Safety Education. 5 hours.
An introduction to the social significance of the accident problem and the nature of the accident prevention program.

576. Principles of Traffic Safety. 5 hours.
Prerequisite: SED 575 or permission of department.

An analysis of traffic accidents and traffic safety practices with psychological testing and use of simulation in the development of knowledge concerning the overall driving situation.

577. Practices in Driver Education. 5 hours.
Prerequisite: SED 576 or permission of department.

The teaching of driving with dual-control automobiles, development of approved driving attitudes and habits, and the administration of high school programs of driver education.

Basic Physical Education (PEB)

Basic Physical Education courses have designated prefix and number PEB 100 to PEB 165. A list of scheduled courses is available in the *Schedule of Classes* printed each quarter. Courses in the Basic Physical Education Program are structured as either one, two, or three credit courses. Classes meeting 2

hours/week are for 1 credit; classes meeting 4 hours/week are for 2 credits; classes meeting 5 hours/week (PEB 148, Fitness for Life) are for 3 credits. Some classes are designated as Beginning, Intermediate, or Advanced. The letter following the course number specifies the level: A—Beginning Level, B—Intermediate Level, C—Advanced Level. Prerequisite courses or specific skill requirements are necessary for intermediate and advanced level courses.

Some courses require payment of an additional fee. This fee may be in the form of a requirement that students purchase specific equipment or supplies, or that students pay a fee to the vendor supplying the facility and/or equipment. Basic Physical Education courses are held in Stegeman Hall, the Physical Education Building, and various off-campus locations. Students must provide their own transportation to off-campus facilities. Students should consult their advisors or the director of Basic Physical Education regarding prerequisites, fees, and class locations.

Professional Physical Education (PED)

178ABC-179ABC. Physical Education Majors. (Basic P.E. for majors only.) 1 hour each.
Two hours a week for six quarters. Lab period may be arranged.

Designed for physical education and recreation majors as introductory courses to junior and senior methods and skill courses.

303. (DED) Rhythmic Movement Activities for Children. 3 hours.

A course designed to introduce the teacher to the skills and activities of creative movement and rhythm for children from nursery school through 6th grade.

307. Physical Education in the Elementary School. 1-5 hours.

Designed to help the teacher understand the place of physical education in the elementary school program and its contribution to the child. Experience is given in planning, teaching, and evaluating physical educational activities.

308. Analysis and Teaching of Movement Games. 5 hours.

A course designed to familiarize students with content and structure of movement games for children. The student will also study and practice effective approaches by which games can be taught to children.

310-321. Teaching of Motor Skills. 3 hours each.

Prerequisite: Basic knowledge and technique of the activity.

Focus on knowledges and techniques of skill analysis and teaching in physical education classes in the content area. Lab periods will be arranged. Students are required (depending on program emphasis) to select four to five of the courses offered.

310 Tumbling

311 Swimming

312 Golf

313 Tennis

314 Badminton

315 Wrestling

316 Soccer

317 Field Hockey

318 Gymnastics

319 Modern Dance

320 Weight Training

321 Folk and Square Dance

336. Teaching Procedures in Physical Education. 5 hours.

Organization and administration of physical education and recreation programs in the school. Planning the curriculum in physical education as a part of the total school program.

345ABC. School Practicum in Physical Education. 1 hour each.

Individual practical experience within the school setting.

360-360L. Kinesiology. 5 hours.

Prerequisite: ZOO 212-212L.

Analysis and application of the physical and physiological principles involved in human motion. Physical laws governing the manipulation of objects in sports.

361. Adapted Physical Education. 5 hours.

Prerequisite: Upper division standing in Teacher Education.

The theory, principles, and techniques of physical education assessment and programming for individuals with medical and/or learning impairment. Practice is given in the therapeutic use of exercise, games, sports, and activities.

372. History and Principles of Physical Education. 5 hours.

A survey of the history and study of principles and trends in health, physical education and recreation, professional organizations, literature, and outstanding programs.

383. Evaluation and Measurements. 5 hours.

Methods in evaluating and measurement of physical education activities; procedures to be

used in evaluating these tests and their results, including statistical analysis.

390-397. Theory and Coaching Methods. 3 hours each.

Prerequisite: Basic knowledge and technique of the activity.

Organized to focus on advanced strategies and coaching methods of team and individual sports. Lab periods will be arranged. Students are required (depending on program emphasis) to select two to three of the courses offered.

390 Track and Field

391 Volleyball

392 Football

393 Basketball

394 Baseball

395 Softball

396 Gymnastics

397 Aquatics

400. Special Problems in Physical Education. 1-10 hours.

Prerequisite: Permission of department.
Independent study in physical education.

442. Movement Education for the Young Child. 1-5 hours.

Designed to introduce the teacher to the skills and activities of movement education for children in nursery and pre-school. The student will also practice and study the effective approaches to teaching movement skills to children in these age groups.

463-463L. Exercise Physiology. 5 hours.

Prerequisite: ZOO 212-212L, 213-213L or equivalent.

An introduction to the physiological effects of human physical activity. Neuromuscular, cardiovascular-respiratory and metabolic responses and adaptations to exercise are studied.

505. Problems of Teaching in Physical Education. 1-5 hours.

Evaluation of instructional procedures utilized in the teaching of physical education in the public schools.

546. Student Teaching in Physical Education. 1-15 hours.

Recreation and Leisure Studies (REC)

118. Social Recreation. 3 hours.

Methods and materials in social recreation. Experience will be given in group planning and conducting social activities. Some laboratory experience will be required.

203. Introduction to Park and Recreation Administration. 5 hours.

A study of the history and development of the organized park and recreation movement; theories of play, professional organizations and scope of the field; analysis of individual's potential contribution to the field.

345ABC. School Practicum in Recreation. 1 hour each.

380. Community Recreation Service. 5 hours.
Prerequisite: REC 203.

A study of objectives, organization, program and personnel in the varied public and quasi-public agencies offering recreation services. The course will include supervision of professional and volunteer personnel in addition to considering problems relating to planning and program operation.

384. Interpretation of Recreation. 5 hours.

The student will develop skills in the design and presentation of outdoor education and interpretative programs, nature trail construction, and other interpretation techniques.

385. Introduction to Therapeutic Recreation. 3 hours.

Prerequisite: REC 203.

An introduction to therapeutic recreation as a professional field of service including history, philosophy and concepts, people served, settings, scope of service, role of practitioners and professionalism.

386. Camp Counseling. 3 hours.

Designed to give prospective camp counselors an understanding of the total camp program, duties and responsibilities of camp counselors. Techniques of camp leadership will be considered.

387. Organization and Administration of Recreation. 5 hours.

Study and evaluation of the organization and administration of recreation and park agencies.

389. Seminar in Recreation. 1 hour.

Prerequisite: Senior class standing.

Discussion of the current aspects of the field of recreation as a profession. Trends and problems which are of concern to graduating recreation majors.

400. Special Problems in Recreation. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation in a special field or the collection and analysis of original data pertinent to a given problem.

405. Recreation Program Planning for Special Populations. 5 hours.

Prerequisite: REC 203 and 385.

Focuses on the philosophy of objectives and content of program planning and evaluation in therapeutic recreation service within various care, treatment and rehabilitation agencies as well as in public recreation settings. Field trip and voluntary service in the health or conventional agency required.

427. Outdoor Recreation Field Laboratory. 5 hours.

Prerequisite: REC 203, permission of department.

Field trip to Land Between the Lakes, Brandon Springs, Tennessee, to study experimental campground design and construction, energy alternatives, environmental education programs, and interpretation programs. Various state and federal recreation professionals meet with the group to discuss intensive recreation resource management techniques. (8-day period, early September, prior to beginning of Fall quarter.)

512. Problems in School and Community Recreation. 5 hours.

Problems of school and community recreation pertaining to philosophy, program, facilities and leadership. This course will consider the school camp program.

530. Camping Administration. 5 hours.

Prerequisite: REC 386 or equivalent experience. Study of organization and administration of camps with particular emphasis on program planning, selection and training of staff, camp site selection and development, health and safety, evaluation and special problems. Individual study of camp programs for the ill and handicapped.

531. Outdoor Recreation. 5 hours.

The organization and administration of outdoor recreation in local, county, and federal agencies with emphasis on objectives, philosophy, problems, trends, and methods of operation.

535. Park Management. 5 hours.

Prerequisite: REC 387.

An introduction to the management, operation, and development of public parks and open spaces.

537. Recreation for the Mentally Retarded. 5 hours.

Prerequisite: REC 536 or EXC 505.

The use of recreational activities and their therapeutic value for the mentally retarded.

538. Recreation and Aging. 5 hours.

Prerequisite: REC 512 and SOC 465.

Recreation program services for the aging and aged in both community and institutional settings.

546. Student Teaching in Recreation. 1-15 hours.

Recreation majors are placed in selected recreation centers for an entire quarter, during which time they are supervised in directing recreation activities.

Dance Education (DED)

153ABCDEF. (PEB) Concert Dance. 1 hour each.

Prerequisite: Permission of department.

Designed to provide performance preparation and experience in modern dance, ballet, jazz and ethnic styles. Choreography, although not required, is encouraged. An annual concert performance plus other public performances are required.

250. Rhythmic Analysis for Dance. 3 hours.

A study of the fundamentals of rhythm relevant to the needs of the dance educator, performer and/or choreographer with emphasis placed upon rhythmic analysis.

252. Improvisation. 2 hours.

Provides the individual an opportunity to discover and explore self-initiated movement and idea relationships and experiences. The purpose is to aid in the development of the student's creative approach to composing the performing. Emphasis will be on individual and group interaction within structured and free improvisational situations.

257. Introduction to Modern Dance Composition. 3 hours.

A study of the principles of dance composition with experience in the development of individual and group studies.

258. Dance Perspectives. 3 hours.

A study of the nature of dance as an art form and as an educational and therapeutic vehicle. The course is designed to increase the student's knowledge of the many facets of dance and to encourage examination of his /her purpose in dance. The class involves lectures, seminars and studio experiences.

265ABC. Modern Dance Tech. I. 2 hours each.

This low intermediate level course is designed for the purpose of aiding the student in the acquisition and development of technical skills in

modern dance. Techniques basic to this dance form plus motional properties as they relate to dance will be emphasized.

266ABC. Ballet Tech. I. 2 hours each.

Designed to build the strength, flexibility, endurance, and control necessary for performance of low intermediate level ballet barre exercises, adagio sequences, and allegro enchainments. An understanding of proper body mechanics and the French vocabulary for ballet will also be emphasized.

281. Methods and Materials in Dance Education. 3 hours.

303. (PED) Rhythmic Movement Activities for Children. 3 hours.

See PED 303.

345ABC. School Practicum in Dance Education. 1 hour each.

351. Composition II. 3 hours.

Prerequisite: DED 257.

A study of principles of dance composition with emphasis on the utilization of those principles in solo and group choreography.

352. Theory and Practice in Modern Dance Technique. 3 hours.

Prerequisite: Permission of department.

Analysis and exploration of the technical aspects of modern dance with emphasis on anatomical structure, muscular activity and movement principles. Participation and teaching experience in a technique class will be part of the laboratory work.

353. Theories of Movement. 3 hours.

Prerequisite: Permission of department.

A study of movement theories of noted dancers and movement analysts.

354AB. Dance Workshop. 3 hours each.

Prerequisite: DED 257.

Projects in choreography, directing, producing and performance culminating in public concert presentations.

365ABC. Modern Dance Tech. II. 2 hours each.

Prerequisite: DED 265ABC.

Designed for the upper-intermediate level student in modern dance. Its purpose is to provide for the continued development of the student's technical skills and performance ability.

366ABC. Ballet Tech. II. 2 hours each.

Prerequisite: DED 266ABC.

Designed to build the strength, flexibility, endurance and control necessary for performance of upper-intermediate level ballet barre exercises, adagio sequences and allegro enchainments. Pointe work will be included.

400. Special Problems in Dance Education. 1-10 hours.

450. History of Dance from Primitive Man Through the Renaissance. 5 hours.

A study of the forms of dance both as a reflection of cultural history and as an art form from primitive times through the Renaissance.

451. History of Dance from the Baroque Period Through the 20th Century. 5 hours.

A study of the forms of dance both as a reflection of cultural history and as an art form from the Baroque period through the 20th Century. The contributions of outstanding leaders will be analyzed.

455. Readings in Dance. 3 hours.

Prerequisite: Permission of department.

A critical review of literature in the field of dance and related arts with emphasis on current personalities, research, issues, and educational trends.

465ABC. Modern Dance Tech. III. 2 hours each.

Prerequisite: DED 365C.

This course is designed for the advanced student of modern dance. Its purpose is to allow for the continued development of technical skill with emphasis on individual style and performance sensitivity.

466ABC. Ballet Tech. III. 2 hours each.

Prerequisite: DED 366C.

This course is designed to build the strength, flexibility, endurance and control necessary for performance of advanced level ballet barre exercises, adagio sequences, allegro enchainments, and pointe work. Style, perfection, and performance quality will be emphasized.

MATHEMATICS EDUCATION (EMT)

335. Secondary School Mathematics Curriculum. 5 hours.

Prerequisite: Admission to teacher education, EPY 304 and MAT 254.

Determining content for the mathematics curriculum of the secondary school and demonstrating competency in this content.

336. Teaching Procedures in Secondary School Mathematics. 5 hours. Five lectures and five lab periods.

Prerequisite: EMT 335.

Planning, developing, and implementing instruction in secondary school mathematics.

345A. School Practicum in Secondary Mathematics. 1 hour. Two weeks in a public secondary school and 1 hour seminar per week in the following quarter.

A school-based, planned practicum experience coordinated with beginning a school year.

400. Special Problems in Mathematics Education. 1-10 hours.

In-depth exploration of special topics in mathematics education of interest to individual students or groups.

435. History of Mathematics. 3 hours.

Prerequisite: MAT 254.

An historical development of selected topics in mathematics. The organization of the course is along lines of mathematical content, but the motivational and pedagogical relevance of such historical insights are emphasized.

440. Mathematics Curriculum: K-4. 3-5 hours.

Professionalized study of the mathematics curriculum in grades K-4 including content, objectives, organization of scope and sequence and relationships of topics.

441. Mathematics Learning: K-4. 3-5 hours.

A study of individual progress and problems in the learning of mathematics. Individual assessment, diagnostic and remedial teaching, internship.

442. Mathematics Methods in Early Childhood Education. 1-5 hours.

Prerequisite: MAT 205 and 206.

Methods and materials for teaching mathematics in nursery school, kindergarten, and grades one, two, and three. The use of concrete and semiconcrete materials and informal laboratory activities appropriate for children in that age range.

455. Diagnostic Teaching of Arithmetic. 5 hours.

Prerequisite: EMT 442 or equivalent.

The reasons why some children have difficulty in learning mathematical concepts will be investigated in terms of the structure of elementary school mathematics as it relates to how children learn mathematical concepts. The students will be guided in using diagnostic strategies of teaching arithmetic to elementary school children.

468. Computers and Algorithms in Mathematics Education. 5 hours.

Prerequisite: MAT 254 or permission of department.

Methods and materials for teaching school mathematics with emphasis upon algorithmic constructions and computer programming.

469. Computer-Based Mathematics Instruction. 5 hours.

Prerequisite: EMT 468 or EMT 335 or equivalent.

Analysis and design of computer-based instruction in school mathematics. Pedagogical bases for designing computer-based instruction will be developed.

470. Advanced Design of Computer-Based Mathematics Instruction. 5 hours.

Prerequisite: EMT 469 and EMT 336 or EMT 505 or equivalent.

Advanced concepts and applications of instructional design for analyzing and creating computer courseware in mathematics education.

499. Research Seminar in Mathematics Education. 1-10 hours.

In-depth exploration of special topics in mathematics education of interest to individual students or groups.

501. Teaching Mathematics in the Elementary School. 5 hours.

Prerequisite: Four courses in education, two courses in mathematics and either teaching experience or permission of department.

An examination of the interrelationships between contemporary mathematics for elementary schools, effective means of communicating mathematical ideas for children and elementary learning theory.

505. Problems of Teaching Secondary School Mathematics Education. 5 hours.

Prerequisite: Four courses in Education.

Instructional procedures and evaluation of mathematics teaching. Current issues in the teaching of mathematics are stressed.

515. Contemporary General Mathematics. 5 hours.

An approach to mathematics curriculum, teachers' procedures, and evaluation through the examination of mathematics content with emphasis on the function concept, applications, and problem solving.

525. Problem Solving in Mathematics. 5 hours.

Prerequisite: MAT 254.

Students will engage in extensive experience and practice in solving mathematical problems. This experience will serve as background for examining theories of mathematics problem solving abilities. Pedagogical techniques for secondary school mathematics problem solving will be examined and curriculum organization to incorporate problem solving in secondary school mathematics programs will be explored.

528. Teaching Number Systems in the Middle School. 5 hours.

Corequisite: MAT 502.

Didactics of number systems for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing natural, integer, rational and real number structures.

529. Teaching Geometry in the Middle School. 5 hours.

Corequisite: MAT 503.

Didactics for geometry for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing geometric and measurement concepts.

530. Teaching Algebra in the Middle School. 5 hours.

Prerequisite: Two courses in mathematics and two courses in education, or permission of department.

Didactics of algebra and number theory for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing algebraic concepts.

531. Teaching Mathematics in the Middle School. 5 hours.

Prerequisite: EMT 530.

Methods and materials for teaching mathematics in the middle school.

546M. Student Teaching in Middle School Mathematics. 1-5 hours.

Prerequisite: EMT 531.

Full-time teaching in a middle school with supervision by University personnel in mathematics.

546S. Student Teaching in Secondary School Mathematics. 1-15 hours.

Full-time teaching in a secondary school.

MIDDLE SCHOOL EDUCATION (EMS)

303. Introduction to Middle School Education. 5 hours.

Open only to Middle School teacher education majors.

An introduction to the middle school as a segment of American education with emphasis on its rationale, antecedents, and status in modern education. Supervised laboratory experiences are included.

400. Special Problems in Middle School Education. 1-5 hours.

Prerequisite: Admission to Middle School Program.

Independent study of educational problem. Student confers with instructor who is in field.

502. Teaching in the Middle School. 5 hours.
Prerequisite: EMS 303 or EFN 303.
Open only to Middle School teacher education majors.

In-depth study of the various roles of middle school teachers with particular emphasis on planning, executing, and evaluation of the instructional process. Supervised field experiences are included.

503. The Middle School. 5 hours.
Prerequisite: One basic course in curriculum. Will study in depth research supporting the concept of a separate organization and program for youngsters 10 to 14 years of age, types of curricular plans for the middle school, aspects of teaching in the middle school, and the organization and staff of the middle school.

504. The Middle School Curriculum. 4 hours.
Prerequisite: EMS 502.
Open only to Middle School teacher education majors.

A study of the process of curriculum planning with special emphasis on appropriate educational outcomes for the middle school student. Implications will be drawn from their unique physical, intellectual, and emotional characteristics. The process of curriculum evaluation will also be studied.

510. (ECE/EXC) Teaching Special Needs Students in Regular Classroom. 5 hours.
See ECE 510.

546. Student Teaching in Middle School. 1-15 hours.
Prerequisite: EMS 303, 502, 504, admission to Middle School program, senior classification. Full-time laboratory experience in a middle school during which student assumes major responsibility for instruction.

MUSIC EDUCATION (EMU)

(For other courses, see "Music Education," School of Music, College of Arts and Sciences.)

345AB. School Practicum in Music Education. 1 hour each.

400. Special Problems in Music Education. 1-10 hours.
Prerequisite: Permission of department. Specialized training in music education appropriate to the needs of the individual. The student's project may involve intensive library

investigation in music education or the collection and analysis of original data pertinent to a problem in music education.

546. Student Teaching in Music Education. 1-15 hours.

DIVISION FOR EXCEPTIONAL CHILDREN

Exceptional Children (EXC)

400. Special Problems in Exceptional Children. 1-10 hours.

Prerequisite: Permission of department. This is an independent study devoted to particular problems of the various types of exceptional children.

499. Research Seminar in Exceptional Children. 1-10 hours.

Prerequisite: Permission of department. A seminar study of research particular to exceptional children.

500. Introduction to Exceptional Children. 5 hours.

Prerequisite: Four courses in education including EPY 304.

Nature, cause and treatment of children's disabilities and their influence on emotional, social, educational, and vocational adjustment. Special services required for exceptional children to develop to the maximum capacities.

501. Principles of Assessment of Exceptional Children. 1-5 hours.

Prerequisite: EXC 500 and permission of department.

Study of standardized and informal evaluative procedures for use with exceptional children. Experience in formal and informal diagnostic techniques and in reporting.

502. Creative Arts for Handicapped Children. 5 hours.

Prerequisite: Training in the arts or education and junior standing or permission of department.

The use of art, music, and child drama to promote the social-emotional development of mentally and emotionally handicapped children. Using developmental theory as the frame of reference, students will consider and practice developmentally appropriate techniques, materials, and activities for using the creative arts with handicapped children.

504. Nature of Mental Retardation. 5 hours.
Prerequisite: EXC 500.

Description to types, nature, and causes of mental retardation and implications for adjustment and education. Problems of parental adjustment, diagnosis, treatment, and educational modifications.

505. Behavior Management With Exceptional Children. 5 hours.

506. Teaching the Mentally Retarded. 5 hours.
Prerequisite: Four courses in education plus EXC 500, 504, and 508.

The study, selection and preparation of suitable curricular materials; methods used in teaching the skills which mentally retarded children need.

507. Secondary School Programming for the Mentally Retarded. 5 hours.

Prerequisite: EXC 500, 504 and 508.

Study will emphasize the needs of the adolescent and young adult mentally retarded: pre-occupational, occupational and related experiences, home and family living, civic responsibility, and community living. The relationship of the teacher as a counselor and the utilization of community resources will also be stressed.

508. Curriculum for the Educable Mentally Retarded. 5 hours.

Prerequisite: EXC 500 and 504.

Study of various curricular approaches to the education of the educable mentally retarded; i.e., subject matter—academic, developmental, occupational education. Throughout, curricular programs will be considered in reference to psychological and cultural determinants in the mentally retarded and attainments necessary for adequate function in society.

509ABCDEFGHIJKMNPSTU. Practicum in Special Education. 1-15 hours (maximum 15 hours).

Prerequisite: EXC 500.

510. (ECE/EMS) Teaching Special Needs Students in Regular Classroom. 5 hours.
See ECE 510.

520. Emotionally Disturbed Children in the Classroom. 5 hours.

Prerequisite: EXC 500 or permission of department.

Considers the nature and characteristics of emotional and social disturbances and effects of learning and educational adjustments. Basic alterations in school program are discussed.

521. Teaching Procedures for Disturbed Children. 5 hours.

Prerequisite: EXC 500 or permission of department.

Planning and implementing adaptations in the educational programs for disturbed children. Emphasizes intervention techniques and behavior management, educational diagnosis, therapeutic and remedial teaching, and the relationship process.

546BMS. Student Teaching in Special Education. 1-15 hours.

B = Mental Retardation. M = Motor Handicapped. S = Severely Mentally Retarded.

595. Teaching the Severely Mentally Retarded. 5 hours.

Prerequisite: EXC 500, 504, CFD (PSY) 395.

Considers (1) the growth and development of the severely mentally retarded and (2) programs maintained in public schools, institutions, private agencies, and sheltered workshops to prepare them for optimum functioning with emphasis on family life, mobility, employment, literacy, etc., from both the curricular and methodological aspects of education.

596. Programming for the Moderately/Severely Retarded Adult. 5 hours.

Prerequisite: EXC 595.

This course is designed to equip the student with an understanding of the unique problems of the adult retardate in the community and the procedures and problems in helping this population learn skills needed for work and community living.

Speech Pathology and Audiology (SPA)

310. Survey of Speech Problems. 5 hours.

Introductory course for those majoring in speech pathology. Acts as course for the classroom teacher who wishes to become informed about speech problems and as a course for students majoring in speech. A study of the major etiology and basic therapy for all types of speech defects, with a concentration on those most commonly found in the classroom.

400. Special Problems in Speech Pathology and Audiology. 1-10 hours.

Adaptation of the speech pathology and audiology curriculum to the individual needs of mature students. A detailed outline of requirements must be prepared in conference by the student and instructor and approved by the head of speech pathology and audiology.

412. Anatomy and Physiology of the Speech Mechanism. 3 hours.

A study of the anatomy and physiology of breathing, phonation, resonance, and articulation for speech; a study of the physical phenomena in voice and speech.

413. Anatomy—Physiology and Pathology of the Hearing Mechanism. 5 hours.

Anatomy and physiology of outer, middle and inner ear structures; auditory pathways leading to and including the brain stem; and the primary auditory projection areas in the cortex. Discusses pathologies which affect each of the structures of the auditory system.

414S. (LIN) Speech and Hearing Science. 5 hours.

The physical properties of sound; basic psychoacoustics; the human speech mechanism as a sound source and resonator; acoustic properties of vowels and consonants; sound spectrum relationships of vocal pitch, loudness, and voice quality; basic instrumentation.

450. (LIN/PSY) Language Development. 5 hours.
Prerequisite: EPY 304 or equivalent and CFD (PSY) 408 or equivalent.

A study of the various aspects of language development. Provides a foundation in topics such as the following: processes of reception, integration, and expression of symbolic information; the nature and effects on personal development and behavior of linguistic symbolism. Students would learn basic norms for language development as a basis for diagnosis.

451. Speech and Language Problems in the Classroom. 5 hours.

A consideration of speech and language problems on the basis of classroom involvement. Basic information on speech and language development and interfering factors.

471. Introduction to Audiology. 5 hours.

Prerequisite: SPA 413.

The anatomy and basic psychophysics of hearing, the pathologies causing hearing loss, and basic theory of hearing evaluations. A survey of educational, psychological and medical rehabilitation for persons with a loss. Practice in pure tone audiometry.

473. Psycho Social Aspects of Deafness. 5 hours.

Prerequisite: SPA 471.

A study of the development, adjustment, and educational needs of the deaf, including mental development, personality development, emotional adjustment, and social maturity; the aptitudes, special abilities and associated handicaps of the deaf.

474. Articulatory Disorders of Speech. 5 hours.
Etiology, rationale and methods of therapy for functional and organic disorders of voice and articulation. Development of a therapeutic program and lesson plans.

475. Voice Disorders. 5 hours.

Pitch, loudness, and quality disorders of voice due to functional and organic causes. Etiology and therapies with supervised laboratory experience.

476. Stuttering: Etiology and Therapy. 3 hours.
Major theories of causation of stuttering whether based in neurophysiological, emotional, or learning factors. The development of an integrated therapy based on modern research.

481. Basic Manual Communication. 5 hours.

Prerequisite: Senior level.

History and description of manual communication systems. Practice in the expressive and receptive use of fingerspelling and sign language.

501, 502, 503. Clinical Practice in Speech Pathology. 2 hours each.

Supervised clinical practice in speech pathology including functional and organic disorders. Speech problems provided for observation and clinical practice include articulation, voice, delayed speech, stuttering, and aphasia. In addition, speech problems associated with cleft palate, cerebral palsy, and hearing loss are included in the therapy program. As the student progresses in the program, the level of case severity and responsibility will increase.

504. Clinical Practice in Speech Pathology. 1-10 hours.

See description for SPA 501-503.

511, 512, 513. Clinical Practice in Audiology. 2 hours each.

Clinical and field experience in audiology including neonatal testing, pediatric audiology, public school screening, work with the pre-school deaf, auditory training and speech reading, noise measurements and hearing conservations, and geriatric audiology.

514. Clinical Practice in Audiology. 1-10 hours.

See description for SPA 511-513.

534. Language Therapy for Children. 5 hours.

Prerequisite: SPA 450.

A developmentally based consideration of the establishment of basic, sequential, receptive and expressive language functioning in the delayed child.

538. Program Administration in Speech Pathology. 5 hours.

Methods for finding, selecting and scheduling speech cases in the public schools, clinics, etc. The organizational and administrative problems in keeping records, reporting and coordinating speech pathology activities. Discussion of professional responsibilities, relationships with other professional persons, and current trends in the profession.

546. Student Teaching in Speech Pathology. 1-15 hours.

575. Directed Individual Study in Speech Pathology. 5 hours.

Prerequisite: Four courses in speech pathology. Adaptation of the speech pathology curriculum to the individual needs of mature students. A detailed outline of requirements must be prepared in conference by the student and instructor and approved by the head of speech pathology and audiology.

576. Directed Individual Study in Speech Pathology. 5 hours.

Prerequisite: Four courses in speech pathology. Continuation of SPA 575, but content must be different.

579. Auditory Rehabilitation. 5 hours.

Prerequisite: SPA 413, 471, 578.

A study of the theories and procedures used in the rehabilitation of both the deaf and hard of hearing. Both the historical development and current trends in education of the hearing impaired will be reviewed.

READING EDUCATION (ERD)

099R. Reading Improvement. 3 institutional hours.

A reading improvement course which focuses on increasing reading comprehension, developing vocabulary, establishing a flexible reading rate, and improving test-taking and study skills.

342. Teaching of Reading to Early Elementary Children. 5 hours.

Introduction to development of reading readiness and the teaching of reading in early school years, with supervised practice in several basic teaching procedures.

343. Corrective Reading in the Early Elementary Grades. 5 hours.

Instruction/practice in diagnosing/prescribing corrective instruction in reading for young children experiencing moderate difficulty in learning to read. Practice in diagnosing/

prescription with one child or small group of children and reporting results.

352. Teaching of Reading in the Middle School. 5 hours.

Methods, materials, and evaluation strategies for teaching reading in the middle grades. Instructional techniques are introduced with attention to underlying principles of thinking and learning. Printed materials and electronic media are appraised for developing literacy. Formal and informal methods are considered for appraising pupil progress in reading.

353. Content Area Reading in the Middle School. 5 hours.

Prerequisite: ERD 352.

An in-depth study of the special skills essential for reading in the content areas commonly taught in the middle school grades. Attention given to testing, study skills, and classroom organization for reading in Language Arts, Social Studies, Mathematics, and Science. Supervised practice in middle school classrooms.

354. Corrective Reading in the Middle School. 5 hours.

Prerequisite: ERD 352.

Identification and correction of reading problems of middle school age pupils. Emphasis on individual and small group strategies. Special attention to testing and teaching materials for corrective work. Pupils with reading problems are evaluated and tutored and case reports are prepared.

400. Special Problems in Reading Education. 1-10 hours.

Prerequisite: Permission of department.

Students are provided specialized training in the teaching of reading appropriate to the needs of the individual. The student's project may involve intensive library investigation in the field of reading or the collection and analysis of data pertinent to a specific problem concerned with reading instruction.

401. The Teaching of Reading. 5 hours.

A systematic coverage of the teaching of reading, including methods, techniques, and materials, from first through twelfth grades.

403. Teaching Reading in the Secondary School. 5 hours.

The development of reading skills needed by students in grades 7-12 for success in school subjects.

404. Adult Literacy—Basic Reading Needs. 5 hours.

An examination of the causal factors contributing to adult illiteracy and of those methods

and materials appropriate for teaching adults to read.

SCIENCE EDUCATION (ESC)

345A. School Practicum in Science Education. 1 hour.

400. Special Problems in Science Education. 1-10 hours.

Prerequisite: Permission of department.

Selected students are permitted to secure specialized training appropriate to their individual needs. This study may involve intensive library investigation on a single topic or the development of science instructional materials relevant to a given problem.

441. Foundations for Science Teaching. 5 hours.

For science majors who are interested in teaching and required for undergraduates in the secondary science teacher training program. The course provides a basis for students to make career decisions about science teaching, to examine the interrelationships of science and science teaching, and to gain basic process skills and lab technique skills.

442. Science for Early Childhood Education. 1-5 hours.

Course especially designed for undergraduate majors in Early Childhood Education.

443. Science Curriculum for the Middle School. 5 hours.

Prerequisite: EMS 303, 502, admission to Teacher Education.

Science curriculum materials suitable for use in the middle school are analyzed for appropriateness to achieve specific instructional objectives. The development and selection of curriculum materials are related to purposes of science instruction including the range of materials essential to meet the needs of middle school pupils.

444. Methods of Teaching Science in Middle School. 5 hours.

Prerequisite: EMS 303, 502, admission to Teacher Education.

Using classroom, laboratory and field experiences, science teaching skills including planning, using and monitoring teaching strategies with different instructional materials and evaluation schemes are developed.

445. Science Curriculum for the Secondary School. 5 hours.

Prerequisite: ESC 441, admission to Teacher Education.

Science curriculum materials suitable for use

in grades 7-12 are analyzed for appropriateness to achieve specific instructional objectives. The development and selection of curriculum materials are related to purposes of science instruction. The range of materials needed for pupils in grades 7-12 is included.

446. Methods of Teaching Science in the Secondary School. 5 hours.

Prerequisite: ESC 441, admission to Teacher Education.

Using classroom, laboratory and field experiences, skills in science teaching methods, instructional materials and evaluation suitable for pupils in grades 7-12 are developed. These include using teaching strategies with different instructional materials and evaluation schemes for effective science instruction.

448. Computers in Science Education. 5 hours.

Prerequisite: ESC 445 and 446 or equivalent.

School application of instructional computing is emphasized. Use of computers in science classrooms for drills, tutorials, problem solving, simulations and testing. Attention is given to selection and evaluation of computer-based science teaching materials.

503. Teaching Science to Students with Special Educational Needs. 5 hours.

Prerequisite: Admission to Teacher Education. Develops an understanding of the basis and practice of modifying science programs/teaching for students with special educational needs and introduces skills for modifying science programs/teaching strategies.

504. Teaching Strategies for Middle and Secondary School Science Teachers. 5 hours.

Prerequisite: EMS 303, admission to Teacher Education.

Designed to improve the instructional competencies of students preparing to teach science in the middle school. The course includes preparation in the planning and implementation of instructional strategies.

546. Student Teaching in Science Education. 1-15 hours.

SOCIAL SCIENCE EDUCATION (ESS)

335. Basic Curriculum in Social Science. 5 hours.

Prerequisite: Admission to Teacher Education. Current status and trends with illustrations of selected teaching strategies and media for both cognitive and affective learning.

336. Teaching Procedures in Social Science. 5 hours.

Prerequisite: Admission to Teacher Education. Development of instructional objectives and the examination and application of instructional procedures, utilization of media and methods of evaluation.

337. Research, Evaluation, and Measurement in Social Science Education. 5 hours.

Prerequisite: Admission to Teacher Education. Study of basic procedures of research and evaluation, criteria for judging quality of research and evaluation reports, basic measurement procedures and application to classroom use.

338. Using Computers in Social Science Education. 5 hours.

Prerequisite: EFN 303 or EPH 380 and EPY 304. Admission to Teacher Education.

Selection, adaptation, and application of microcomputer programs for individualized drill, problem solving, simulations, and testing related to social science objectives in schools are examined. Emphasis is on learning to use social studies computer instructional materials.

340. Middle Grades Social Studies Methods. 5 hours.

Prerequisite: Admission to Teacher Education. Study and evaluation of teaching materials and techniques in social studies for middle grade students.

342. Early Childhood Social Studies. 5 hours.

Prerequisite: Admission to Teacher Education. Introduction to basic social studies instruction for young children; teaching methods, materials and media, and evaluation strategies. Emphasis upon design and delivery of activities for students in a field setting.

345AB. School Practicum in Social Science Education. 1 hour each.

Prerequisite: Admission to Teacher Education. In-school observation and practical experience.

352. Teaching State and Local Citizenship. 5 hours.

Prerequisite: POL 101 and Regents' Social Science Core. Middle School or Social Science Education majors only; permission of department.

Examination of rationale, resources in political science and civic/citizenship education, and teaching procedures for instruction on state and local citizenship in middle grades and high schools.

400. Special Problems in Social Science Education. 1-10 hours.

Intensive study of a problem in social science education through library research or collection and analysis of primary data.

401. (EAV) Basic Instructional Media Competencies. 3 hours.

See EAV 401.

420. Social Science Education and Environmental Problems. 5 hours.

Prerequisite: One course in geography; 40 hours of social science, or permission of department.

A field study of land-use and energy problems or rural and urban Georgia relating various environmental considerations to social sciences content and methods.

501. Teaching of Geography. 5 hours.

Prerequisite: One course in geography; 40 hours of social science.

Geographic principles and the history of geography in the school curriculum; the literature of the field, including textbooks; the application of special techniques, i.e., field methods and map study; and geographic evaluation.

503. Teaching Social Studies in the Elementary School. 5 hours.

The examination and application of instructional procedures and materials focusing upon the cognitive and affective processes relevant to elementary school social studies education.

504. Teaching Social Studies in the Middle Grades. 5 hours.

Prerequisite: Admission to Teacher Education. The examination and application of instructional procedures and materials focusing upon the cognitive and affective processes relevant to middle grades social studies education.

520. Economic Education in the Social Science Curriculum. 5 hours.

Corequisite: ECN 545.

Examination and evaluation of instructional strategies and materials for teaching basic economic concepts in an integrated K-12 social science curriculum with emphasis on utilizing a decision-making model for analyzing contemporary economic problems.

546. Student Teaching in Social Science Education. 1-15 hours.

Prerequisite: Admission to Teacher Education and ESS 336.

Teaching of social studies in public school under supervision of a teacher and a Social Science Education faculty member.

555. Teaching Social Science to Students with Special Education Needs. 5 hours.

Prerequisite: EFN 303.

Develops understanding of the characteristics of exceptional students and provides a basis for modifying social studies programs, teaching strategies, and materials to meet needs of exceptional students. Credit will not be allowed for both ESS 555 and EXC 500.

SPEECH EDUCATION (ESP)

336. Teaching Procedures: Speech. 5 hours.
Methods for teaching speech in secondary schools.

400. Special Problems in Speech Education. 1-10 hours.

Prerequisite: Permission of department.

Individualized study of selected topics related to the teaching of speech.

546. Student Teaching in Speech Education. 1-15 hours.

593. (SPC) Speech Communication for the Elementary Teacher. 5 hours.

See SPC 593.

STUDENT TEACHING (EST)

400. Special Problems in Teaching. 1-10 hours.

Prerequisite: Permission of department.

Based upon individual needs assessments of students, instruction is provided in the student teaching area including assigned readings, individual projects, and seminar discussions.

510. Fundamentals in the Supervision of Student Teaching. 5 hours.

Prerequisite: Limited to supervising student teacher personnel and permission of department.

Introduction to the theory, principles, and practices in the supervision of student teaching and other professional laboratory experiences.

511. Internship in the Supervision of Student Teaching. 5 hours.

Prerequisite: EST 510, a student teacher has been assigned, and permission of department. A study seminar program; directed supervision of student teaching and other field experiences.

DIVISION OF VOCATIONAL EDUCATION

Vocational Education (EVO)

410. Principles and Practices of Career Education. 5 hours.

Prerequisite: Senior standing, major in Education.

An overview of Career Education including major theories of career development and adjustment, program characteristics, leadership and administration, and curriculum materials and other resources.

501. Individualizing Instruction for Vocational Education. 5 hours.

Prerequisite: EPY 304 or equivalent and course in curriculum planning.

Course provides background and knowledge required for developing and implementing individualized instruction for vocational education programs at the secondary and post-secondary levels. Methods will be applied specifically to vocational education curricula.

503. Coordination of Cooperative Vocational Education Programs. 5 hours.

Prerequisite: Permission of department.

Standards and selection of students and training stations and guidance of students in cooperative vocational education programs.

505. Problems of Teaching Vocational Education. 5 hours.

Prerequisite: Permission of department.

Course designed to address instructional procedures and evaluation of vocational education programs within the public schools.

520. Evaluation of Vocational Programs. 5 hours.

Prerequisite: Teaching or administrative experience.

Designed to prepare vocational educators to identify and select evaluation models, collect and analyze data, report data, and relate evaluation to program change for local and state vocational education programs.

525. Program Projection in Vocational Education. 5 hours.

Prerequisite: None. (EVO 520 recommended.) The course is designed to develop the competencies necessary for the development of annual and long-range plans for vocational education programs educational systems: competencies include data collection, writing program objectives, writing plans and identifying alternatives.

526, 527, 528, 529, 530. Basic Theory in Vocational Education. 5 hours each.

Prerequisite: Junior standing, verified occupational experience.

An evaluation of skills and knowledge gained through senior level employment in a vocational trade or technical area. Each occupational area is divided into five major divisions or scopes. A written and performance examination is administered for each scope. The experienced mechanic or technician may receive five quarter hours of credit for each major division or scope successfully completed.

546. Student Teaching in Vocational Education. 1-15 hours.

Courses leading to certification in various teaching fields in vocational education are listed by departments.

555. Teaching Vocational Education to Students with Special Education Needs. 5 hours.

Prerequisite: Admission to Teacher Education in one of the departments within the Division of Vocational Education.

Designed to provide vocational education teachers with an understanding of the special needs learner, whereby their instructional program and teaching strategies can be modified to meet the needs of these learners.

Agricultural Education (EAG)

335. Basic Curriculum Planning in Agricultural Education. 5 hours.

Prerequisite: EPY 304 or 305 and permission of department.

Determining curriculum content and planning instructional programs in vocational agriculture for high school and adult groups based upon their needs and interests. Directed observation in selected schools.

336. Teaching Procedures in Agricultural Education. 5 hours.

Prerequisite: EPY 304 or 305, EAG 335 and permission of department.

Study and evaluation of teaching procedures and techniques which might be used in teaching vocational agriculture to high school and adult groups. Directed observation and planning for student teaching.

349. Seminar in Agricultural Education. 3 hours.

Prerequisite: Student teaching.

A seminar dealing with problems emerging from experiences in apprentice teaching. Emphasis will be placed upon the planning of

school programs and the place and responsibility of the teacher in the school.

400. Special Problems in Agricultural Education. 1-10 hours.

Prerequisite: Departmental enrollment.

Specialized training appropriate to the needs of the individual, involving intensive library investigation or the collection and analysis of data pertinent to a given problem.

505. Problems of Teaching Agricultural Education. 5 hours.

Instructional procedures and evaluation of teaching in terms of pupil growth.

546. Student Teaching in Agricultural Education. 1-15 hours.

Prerequisite: EPY 304 or 305, EAG 335 and 336.

Prospective teachers of vocational agriculture are placed as student teachers in carefully selected schools of the state for an entire quarter. During this period they are carefully supervised in dealing with the problems of teaching vocational agriculture.

Business Education (EBE)

300. Beginning Shorthand. 5 hours.

Shorthand theory, development of skill in wordbuilding, writing, and dictation of practiced material from business vocabulary.

301. Intermediate Shorthand. 5 hours.

Prerequisite: EBE 300 or equivalent.

Theory reinforcement, improving speed and accuracy in taking dictation on both practiced and new-matter materials, and transcription at the typewriter.

302. Advanced Shorthand. 5 hours.

Prerequisite: EBE 301.

Development of dictation speed on unfamiliar material; emphasizes handling of materials, vocabulary shortcuts, and efficient transcription techniques, and production of mailable transcripts.

303. Beginning Typewriting. 5 hours.

Introductory typewriting for personal or vocational use. Emphasis is placed on the mastery of touch control of keyboard characters and operator parts. Basic introductory skills are acquired on correct typewriting techniques, composing, and application of typewriting skill to simple manuscripts, tabulation, etc.

305. Advanced Typewriting. 5 hours.

Prerequisite: EBE 303.

Emphasizes the application of typewriting skills to production of letters, statistical copy, tabulation, forms and manuscripts.

310. Business Office Procedures. 5 hours.

Prerequisite: EBE 302, 305 or equivalent.

Secretarial traits and duties; filing; operation of dictating, duplicating, calculating and other office machines in a simulated office setting.

311. Business Machines. 5 hours.

Practicum in the use of calculating machines, accounting machines, and key-punch machines with application to student's area of specialization.

335. Basic Curriculum in Business Education. 5 hours.

Corequisite: EBE 336.

Determining curriculum content and planning instructional programs in business education.

336. Teaching Procedures in Business Education. 5 hours.

Corequisite: EBE 335.

Study and evaluation of teaching materials, methods and techniques in business education. Includes directed observation, lesson planning, and field experience in individual laboratory.

400. Special Problems in Business Education. 1-10 hours.

Prerequisite: Senior standing in business education.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve library investigation in the field or the collection and analysis of original data pertinent to a given problem.

401. Business Communication. 5 hours.

Theory and practice in the processes (thinking, reading, writing, speaking and listening) involved in business communication.

501. Theory and Principles in Shorthand and Typewriting. 5 hours.

Prerequisite: EBE 302, 305, 336, or equivalent.

Teaching theory, psychological principle of skill building, materials development and evaluation.

502. Instructional Strategies for Basic Business Education. 5 hours.

Organization, standards, evaluation, textbooks, materials, special teaching techniques, motivation, individual differences in the teaching of basic business courses.

503. Word Processing and Office Systems. 5 hours.

Organization, module development, objectives, standards, evaluation, textbooks, materials, equipment, teaching techniques, individual differences in the teaching of office practice and office machines.

504. Instructional Strategies for Accounting Teachers. 5 hours.

A course for beginning and experienced teachers aimed at helping to deal adequately with the basic factors in bookkeeping-accounting. It also deals with specific suggestions for teaching selected subject matter areas in bookkeeping-accounting. Materials, teaching procedures, standards, and evaluation are emphasized.

507. Office Management. 5 hours.

Scientific office management: principles, equipment, supervision, information management, methods and procedures, job organization and evaluation, selection and training of office personnel.

508. Business Data Processing for Teachers. 5 hours.

Functions and techniques of data handling, unit record systems, electronic data processing systems, number systems, central processing unit, internal processing, the programming function, input-output, media, magnetic tapes.

509. COBOL Business Applications for Teachers. 5 hours.

Prerequisite: EBE 508, CSC 503, or permission of department.

Application of basic knowledge of programming to problems in inventory control, accounts receivable, and payroll. Attention is given to methodology of teaching these applications.

510. Systems Analysis and Design for Teachers. 5 hours.

Prerequisite: EBE 509, CSC 503, or permission of department.

Provides technical background and knowledge for teaching advanced programming on systems design. Includes project management, documentation standards, hardware, software, forms design, feasibility studies, file organization, systems design, and development.

512. History and Philosophy of Vocational Business Education. 5 hours.

Origin and development of vocational education with emphasis upon business education; federal legislation for vocational education, and administration of federally aided programs; vocational and technical education programs in industry; changing manpower needs and new media and retraining procedures as instruments for updating vocational programs.

546. Student Teaching in Business Education. 1-15 hours.

576. Consumer Financial Planning. 5 hours.
Prerequisite: ECN 105 or 545 or equivalent.
Focuses on specific consumer problems that students encounter during school years, as well as those they will confront after leaving school; emphasizes how our economy functions, making purchases wisely, managing money to best advantage, evaluating sales and advertising practices, guarding against unwise buying practices and dishonest selling practice.

Distributive Education (EDE)

100. Introduction to Distributive Education. 5 hours.

Aims, organization, and activities of a distributive education program.

200. Distributive Occupational Experience: Basic. 5 hours.

Supervised and directed full-time work experience in selected business establishment engaged in marketing and distribution. Students will complete an assigned project dealing with student occupational objectives and employment. Work reports submitted weekly and job performance evaluated periodically. An overview of on-the-job experiences in the fields of distribution and marketing.

301. Organization of Distributive Education. 5 hours.

The distributive education program at the federal, state and local level; duties of the teacher-coordinator; operation of the adult distributive education program; visits to programs in operation.

335. Basic Curriculum in Distributive Education. 5 hours.

336. Teaching Procedures in Distributive Education. 5 hours.

400. Special Problems in Distributive Education. 1-10 hours.

Prerequisite: Permission of department.

Selection, planning and solving a problem through research, and/or study, and/or product development mutually agreed upon by a student and the instructor. It may be pursued individually by one student or jointly with other students who have similar interests and needs.

499. Research Seminar in Distributive Experience: Sales. 5 hours.

Prerequisite: Permission of department.

Identification of a problem, specifically related to the professional or technical program. Conducting appropriate research to arrive at a solution or conclusion. Formal classroom

instruction and a written and/or oral presentation of the findings will be required.

500. Distributive Occupational Experience: Sales. 5 hours.

Directed work-experience in cooperating distributive business; 500 hours in sales or sales-supporting business.

501. Distributive Occupational Experience: Junior Management. 5 hours.

Directed work-experience in cooperating distributive business; 500 hours in supervisory and junior management positions.

505. Problems of Teaching Distributive Education. 5 hours.

Prerequisite: Permission of department.

A study of the problems related to teaching techniques and strategies. An examination of traditional as well as less traditional methods and techniques.

506. Curriculum Planning in Distributive Education. 5 hours.

507. Strategies for Teaching Advertising Services in Vocational Education. 5 hours.

A study and application of sales promotion techniques including display, printed media and broadcast media. A broad understanding of sales promotion principles, techniques and processes will be emphasized with specific application to vocational education programs in marketing and distribution. To meet degree and certification requirements. Not for the following majors: (1) Business Administration, (2) Fashion Merchandising (College of Home Economics), (3) Journalism.

508. Strategies for Teaching Sales and Marketing Functions in Vocational Education. 5 hours.

A study of the nature of selling activities and the people who make up the sales force in our economic system with emphasis in the development of competencies in the field of selling and sales related activities. Of concern will be knowledge, skills and attitudes needed in order to teach salesmanship in vocational education programs. To meet degree and certification requirements. Not for the following majors: (1) Business Administration, (2) Fashion Merchandising (College of Home Economics), (3) Journalism.

546. Student Teaching in Distributive Education. 1-15 hours.

Health Occupations Education (EHO)

345BC. School Practicum in Health Occupations Education.

tions Education. 1 hour each.

400. Special Problems in Health Occupations Education. 1-10 hours.

Prerequisite: New teacher for health occupations.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation in a special field or the collection and analysis of original data pertinent to a given problem. For new teachers, offered as a six-week workshop summer session only.

500. Performance Specification—Health Occupations. 5 hours.

Study of current and emerging roles in the health field and methods of identifying and specifying performance requirements for specific jobs as a basis for instructional planning.

501. Instructional Strategies in Health Occupations Education. 5 hours.

Study of methods and techniques for optimizing learning conditions for students of varying ability levels in community, clinical, laboratory and classroom settings.

503. Coordination of Cooperative Vocational Education Programs. 5 hours.

Systems technology as applied to selecting and organizing course content, maximizing media utilization, managing the learning environment and assessing student achievement in classroom, laboratory, and clinical settings.

546. Student Teaching in Health Occupations Education. 1-15 hours.

Home Economics Education (EHE)

335. Basic Curriculum Planning in Home Economics Education. 5 hours.

336. Teaching Procedures in Home Economics Education. 5 hours.

345ABC. September School Practicum in Home Economics Education. 1 hour each.

400. Special Problems in Home Economics Education. 1-10 hours.

Prerequisite: Permission of department.

Selected students are permitted to secure specialized training appropriate to their needs. This may involve intensive investigation and/or collection of data that results in a report.

546. Student Teaching in Home Economics Education. 1-15 hours.

Industrial Arts Education (EIA)

100. World of Manufacturing. 5 hours.

Readings and lectures will enable the student to form concepts or mental images of what the manufactured world is like. In the lab, working with a lab manual, tools, and materials, problems will be solved using realistic manufacturing techniques.

101. Industrial Arts Woodwork. 5 hours. One lecture and four 2-hour lab periods.

A beginning course in woodworking where consideration is given to the tools, materials, processes, planning and construction of wood products, as they relate to industrial arts and our society.

102. Industrial Arts Drafting. 5 hours. One lecture and four 2-hour lab periods.

A beginning course of drafting in which a study is made of reading and writing a graphic language. Consideration is given to drafting instruments, lettering, geometric construction, orthographic projection, and pictorial drawings.

300. General Shop. 5 hours. One lecture and four 2-hour lab periods.

Prerequisite: Basic industrial arts courses or permission of department.

Practices of working with tools, materials, and methods of managing an educational workshop.

305. Woodworking and the Construction Industry. 5 hours.

Prerequisite: EIA 101 and 102.

A second course in woodworking for industrial arts students, where consideration is given to planning, equipping, organizing lab and methodology of teaching woodworking. Emphasis is placed on the management practices, production practices, and personnel practices as they relate to the construction industry.

310. Metal Technology. 5 hours. One lecture and four 2-hour lab periods.

Planning, construction, and finishing of projects in metal, development of skill in the use of hand tools and hand operated metal working equipment.

315. Power Technology. 5 hours. One lecture and four 2-hour lab periods.

Practices of processing energy; converting, transmitting, and controlling power.

320. Basic Electrical Technology. 5 hours. One lecture and four 2-hour lab periods.

Practices of producing electricity and applying it for heat, light, and power.

326. Advanced Drafting. 5 hours. One lecture and four 2-hour lab periods.

Prerequisite: EIA 102.

A continuation of EIA 102. Consideration is given to perspective drawings, auxiliary drawing, section drawings, developments, inking and reproduction drawings.

328. Industrial Arts Design. 5 hours. One lecture and four 2-hour lab periods.

Prerequisite: EIA 100, 101, 102, 310, 315, 320.

A basic course in design in which the common elements, principles and factors which influence design are studied and applied. Consideration is given to teaching techniques and methodology of design as it relates to industrial arts.

330. Development of American Industries. 5 hours.

A survey of American Industries with emphasis on management, common industrial materials and their production.

332. Industrial Arts and Handicrafts. 5 hours. One lecture and four 2-hour lab periods.

The place and type of industrial arts suitable for adults, camp counselors, teachers, homemakers, and others interested in creative activities.

335. Basic Curriculum Planning in Industrial Arts Education. 5 hours.

Review and study of industrial arts curriculum patterns in the public schools.

336. Teaching Procedures in Industrial Arts Education. 5 hours.

Review and study of procedures and methodology for industrial arts in public schools.

400. Special Problems in Industrial Arts Education. 1-10 hours.

Individual study and research in an industrial arts area.

502. Advanced Metal Technology. 5 hours.

One lecture and four 2-hour lab periods.

Prerequisite: EIA 310.

Individual problem in advanced metal technology, with experience in machine tools, welding and foundry.

504. Advanced Electronics Technology. 5 hours. One lecture and four 2-hour lab periods.

Prerequisite: EIA 320.

Practices of communicating through electrical media.

520. (EAV) Photography in Instruction. 5 hours.

See EAV 520.

521. (EAV) Graphic Technology. 5 hours.

See EAV 521.

522. (EAV) Advanced Graphic-Photographic Techniques. 5 hours.

See EAV 522.

546. Student Teaching in Industrial Arts. 1-15 hours.

Trade and Industrial Education (ETI)

335. Basic Curriculum in Trade and Industrial Education. 5 hours.

336. Teaching Procedures in Trade and Industrial Education. 5 hours.

349. Seminar in Trade and Industrial Education. 3 hours.

400. Special Problems in Trade and Industrial Education. 1-10 hours.

Special problems related to updating occupational skills, developing curriculum materials and/or developing additional teaching competencies in the technical field of specialty.

401. Introduction to Teaching Trade and Industrial Subjects. 5 hours.

Prerequisite: Appropriate Occupational Experience.

Corequisite: ETI 402.

An overview of teaching trade and industrial subjects for new teachers. Emphasis will be placed on the basic beliefs, concepts and practices of teaching in Trade and Industrial Education.

402. Survey of Instructional Strategies and Management Techniques in Trade and Industrial Education. 5 hours.

Prerequisite: Appropriate Occupational Experience.

Corequisite: ETI 401.

A survey of concepts, instructional strategies and management techniques required for entry level teaching in trade and industrial education.

500. Occupational Analysis. 5 hours.

Techniques in analyzing occupations and jobs within an occupation for instructional content.

501. Principles and Practices in Teaching Industrial Education. 5 hours.

Principles and practices of teaching manipulative skills and related technology; organization of subject matter, lesson planning and student appraisal.

502. Curriculum Planning for Trade and Industrial Education. 5 hours.

Principles and procedures in the development of curricula for trade and technical courses.

503. Instructional Materials Development in Trade and Industrial Education. 5 hours.

Development of courses of study, course outlines, instructional material, and organization of course content.

504. School Laboratory Organization and Management. 5 hours.

Principles involved in the physical planning of school shops and laboratories; selection of tools and equipment.

505. History and Policies of Trade and Industrial Education. 5 hours.

History of trade and industrial education; contributions of vocational educators; and principles and laws under which programs operate.

506. Administration and Supervision of Trade and Technical Programs. 5 hours.

Administrative and supervisory techniques of trade and technical programs as related to recent legislation.

508. Development of Diversified Cooperative Training Programs. 5 hours.

Analysis of community training needs; relations between school, community and industry; and organization of DCT programs.

509. Selection and Utilization of Instructional Material for Cooperative Programs. 5 hours.

Selection, organization and application of source material for general and directly related study in part-time cooperative classes.

510. Problems in Trade and Industrial Education. 5 hours.

Specialized training appropriate to the needs of the individual.

511. School Laboratory and Industrial Safety. 5 hours.

Principles and practices involved in safety in school classrooms, shops and laboratories.

546. Student Teaching in Trade and Industrial Education. 1-15 hours.

THE SCHOOL OF ENVIRONMENTAL DESIGN

ADMINISTRATIVE OFFICER

Darrel G. Morrison, B.S., M.S.L.A., *Dean*

GENERAL INFORMATION

The School of Environmental Design serves the state and region as a center for developing the leadership and understanding required to design and plan for a better environment. The undergraduate program consists of professional instruction in landscape architecture. Emphasis is placed on the education of students to meet the requirements being placed on environmental designers in a rapidly changing world.

The profession of landscape architecture takes pride in its responsibility as designer and guardian of all outdoor space for the benefit, protection, use, and enjoyment of people. Both an artist and a scientist, the landscape architect works with earth, water, vegetation, and construction materials to create new sites and improve or preserve those which exist. Whether working in crowded cities or open country, the landscape architect's tools are horticultural, engineering, and artistic skills, as well as an understanding of the ecological dynamics of the natural environment. Landscape architects learn to combine these skills with insight, sensitivity, and imagination in order to help plan an environment which is beautiful, functional, appropriate, and of continuing value to its inhabitants.

Degrees Offered

The studies offered in landscape architecture at The University of Georgia are built around a curriculum designed to prepare students for professional practice. The program leads to the Bachelor of Landscape Architecture degree. This five-year professional program is accredited by the National Commission on Accrediting and the American Society of Landscape

Architects. A Master of Landscape Architecture degree and a Master of Historic Preservation degree are offered through the Graduate School of the University. Additionally, a joint degree program with Georgia Institute of Technology's Department of City Planning makes it possible for a B.L.A. graduate to receive the Master of City Planning degree along with the Master of Landscape Architecture degree.

Field Trips

Supervised field trips are required of all students in connection with their classes. Students travel at their own expense to designated places of landscape interest in Georgia and adjoining states, accompanied by a member of the teaching staff.

Studies Abroad

Selected students are permitted to enroll in a studies abroad program and may receive credit towards their degree. In conjunction with the Department of Visual Arts, the School provides a studio program in Italy offering up to ten credit hours of instruction in landscape architecture and five credit hours of instruction in art history. A European Travel-Study program is also available for credit. This program features visits to some of the most significant historic and contemporary examples of European landscape architecture and planning.

UNDERGRADUATE STUDY

The academic program for the Bachelor of Landscape Architecture Degree consists of two parts:

- (1) Pre-landscape curriculum taken during the freshman and sophomore years at The University of Georgia or other institution.
- (2) The professional program taken during the remaining three years of residence.

Only a limited number of positions are available in the School and early application is advised. The best qualified students are selected from the pool of applicants.

PROFESSIONAL PROGRAM ADMISSION

The transcripts of transfer students entering the School will be evaluated before admission to the professional program. Based upon this evaluation, transfer students may be required to take courses in the pre-landscape core curriculum before being accepted into the professional program.

Students starting as freshmen or sophomores enter the pre-landscape core program and must pass the Landscape Aptitude test, United States Constitution and Georgia Constitution exam, and the United States and Georgia History exam before being admitted to the professional program. Students entering as juniors or above are allowed up to three quarters of residence to satisfy the above examination and test requirements. Remedial courses will be required of students failing.

INTERNSHIP

Under the Internship Program, qualified students are given the opportunity to gain experience by working in a professional office under the supervision of a registered landscape architect or related practitioner (architects, engineers, planners).

The internship requirements are as follows:

- (1) Internships must be approved in advance by the Dean.
- (2) To be eligible to serve in internship for credit, a student must have junior standing or special permission.
- (3) Students are required to take a minimum of 10 credit hours of internship before graduation.
- (4) Students who participate in internships must pre-register and pay tuition for LAR 410, 411, or 412 during the quarter in which the internship is being taken.
- (5) Students must keep a log of their activities, recording a day by day list of projects, duties, and other professional activities and submit a written report.
- (6) A report must be filed by the employer at the end of the internship, describing the duties performed and the quality of the student's work.
- (7) Credit for the course will be given after the logbook and written report on work activi-

ties have been presented. A grade of S (satisfactory) or U (unsatisfactory) will be given for each five hours credit.

ACADEMIC PROBATION

Students in the School of Environmental Design are placed on academic probation at the end of any quarter in which their cumulative grade point average is below 2.3. Students may remove themselves from academic probation by achieving a 2.3 cumulative average. Students placed on academic probation are not permitted to register for or take courses in Landscape Architecture or Environmental Design.

INCOMPLETE

This grade indicates that a student was doing satisfactory work but, for non-academic reasons beyond his/her control, was unable to meet the full requirements of the course. Students in the School of Environmental Design who may be eligible to receive an incomplete should make their request in writing. Forms for this purpose are available in the dean's office. If the request is approved the student is required to come to an agreement with his/her instructor as to the date when coursework will be completed. Time allotted for removal of incompletes may be less than three quarters of residence. If work is not completed by the agreed time, the grade of I will be changed to the grade of F by the instructor.

LATE WORK

The grade on studio projects and papers turned in after the due date will be penalized in accordance with School policy. A copy of this policy is available in the dean's office.

Students with good reason may request an extension in writing 24 hours before the scheduled due date. Official forms requesting an extension are available in the dean's office. If the request is approved, the student is required to come to an agreement with the instructor as to when the work will be completed. Projects and papers not completed by the agreed date will receive a grade of F.

BACHELOR OF LANDSCAPE ARCHITECTURE DEGREE REQUIREMENTS

Pre-Landscape Core Curriculum

This program is intended to prepare students for the professional program in landscape architecture. For general information on the core curriculum, see the General Information section of this bulletin, under the listing *The Core Curriculum*.

	HOURS
AREA I HUMANITIES	20
ENG 101, 102	10
To complete requirements, elect from CML 221, 222; ENG 231G, 232G; SPC 108; PHY 101; CLC 120, 121, 453; foreign language 103, 104, 201, 202	10
AREA II MATHEMATICS AND NATURAL SCIENCE	20
BOT 121-121L, 122-122L, or BIO 101-101L, 102-102L	10
To complete requirements, elect from MAT 100, 109, 116, 253, 254	10
AREA III SOCIAL SCIENCES	20
POL 101	5
Elect one course from HIS 100, 111, 112, 251, 252	5
To complete requirements, elect from ANT 102; ECN 105, 106; GGY 101, 102; PHY 101, 110; SOC 105; POL 202; REL 115; PSY 101	10
AREA IV COURSES RELATED TO MAJOR	30
LAR 300, 310, 343, 372; ET 310	21
ART 120, 130, 260 or other graphic art	5
HOR 325 or 362	5
†If the above are not available, complete requirements from the following and see note (*). BIO 350; BOT 465-465L; CLC 453; GLY 125-125L, 126-126L; LAR (GLY) 520; GGY 104, 120, 121-121L, 122-122L, 410, 420, 459, 463; LAR 373	0-30

†Other related courses may be approved by the dean or advisor.

Professional Program

First Professional Year

LAR 305 Basic Design Studio II
LAR 320 Architectural Design Studio
LAR 344 Graphics II
LAR 351 Plant Materials
LAR 357 Landscape Construction
LAR 373 History and Theory of Architecture
Elective*
Elective*
Elective*

Second Professional Year

LAR 303 Plant Materials
LAR 304 Planting Design I
LAR 315 Introductory Landscape Design Studio
LAR 316 Intermediate Landscape Design Studio
LAR 322 Intermediate Architectural Design Studio
LAR 323 Landscape Ecology
LAR 350 Landscape Engineering
LAR 354 Planting Design II
LAR 358 Advanced Landscape Engineering

Third Professional Year

LAR 317 Intermediate Landscape Design Studio
LAR 318 Advanced Landscape Design Studio
LAR 319 Advanced Landscape Design Studio
LAR 340 Professional Practice in Land- scape Architecture
LAR 355 Senior Design Project
LAR 453 City Planning
Elective**
Elective**
Elective**
135

Professional Experience

LAR 410, 411, 412 Landscape Architecture Internship I, II, and III (10 hours required)	10
Total Credits for Bachelor of Landscape Architecture	235

*For students transferring as juniors, these courses must be LAR 300, 343, 372 and must be taken during the first Fall quarter in residence. Upon successful completion of the above, the transfer student will be admitted to the professional program.

**Selected from LAR 333, Advanced Architectural Design Studio; LAR 352, Plant Materials; ENV 476, Restoration and Preservation of Historic Buildings and Sites or Area IV Courses Related to Major.

COURSES OF INSTRUCTION

Courses in the School of Environmental Design are designated as Landscape Architecture (LAR), except for Environmental Design (ENV) 400, 405, and 476.

(ENV)

400. Man and the Physical Environment. 5 hours.

Not open to landscape architecture majors. Prerequisite: Upper division standing or permission of school.

A survey course for non-majors which investigates the natural and man-made forces affecting environmental quality and change. Developed to prepare the student for a participating role in environmental issues.

405. Site Development Analysis. 5 hours.

Prerequisite: LAR 315, 343, 358, permission of school.

The generation and evaluation of alternative site development schemes utilizing analytical models and interactive computer techniques.

476. Restoration and Preservation of Historic Buildings and Sites. 5 hours.

Survey of European and American historic restoration and preservation theory, its evolution and practice, and its relationship to the concept of environmental quality.

(LAR)

300. Basic Design Studio I. 5 hours. Five lab periods.

Basic principles of design theory and philosophy. Application through the use of two- and three-dimensional problems involving form, light, color, and texture.

303. Plant Materials. 5 hours.

Prerequisite: BOT 121-121L, HOR 325 or 362. A study of plant materials with emphasis on plant keying, identification and use. Evergreen trees, shrubs and vines.

304. Planting Design I. 5 hours. Five lab periods.

Prerequisite: LAR 303, 343, 344, 351. Analysis of plant elements and form. Emphasis on plant function in the landscape composition. Basic problems in planting design of

small areas with emphasis on orientation, arrangement and human needs.

305. Basic Design Studio II. 5 hours. Five lab periods.

Prerequisite: LAR 300 and 343.

The design concept: research, analysis, synthesis. A linking together of basic design philosophy as outlined in LAR 300, the design concept and practical design situations.

310. Introduction to Landscape Architecture. 1 hour. One lecture period.

An introduction to the study of landscape architecture and the many aspects of the profession. The design process, landscape engineering, ecology, site planning, the city and region are areas explored through lecture, slides, and movies.

315. Introductory Landscape Design Studio. 5 hours. Five lab periods.

Prerequisite: LAR 305 and 350 and 357.

Small scale projects involving elementary problems of design. Emphasis on circulation patterns, material characteristics and the use of small elements of design in the landscape.

316. Intermediate Landscape Design Studio. 5 hours. Five lab periods.

Prerequisite: LAR 315.

Intermediate scale projects involving a variety of topographical characteristics, design elements, space and circulation requirements.

317. Intermediate Landscape Design Studio. 5 hours. Five lab periods.

Prerequisite: LAR 316.

Emphasis on park and recreational design for various population requirements.

318. Advanced Landscape Design Studio. 5 hours. Five lab periods.

Prerequisite: LAR 317.

Studies involving a complexity of design elements featuring land use, ecology and circulation problems at the large scale and spatial and natural relationships at the human scale.

319. Advanced Landscape Design Studio. 5 hours. Five lab periods.

Prerequisite: LAR 317.

Continuation of LAR 318 with emphasis on the preparation of detailed design for projects.

320. Architectural Design Studio. 5 hours. Five lab periods.

Prerequisite: LAR 305.

Exploration of material and structural logic as the basis for architectural design. Consideration of climatic and environmental aspects of design.

322. Intermediate Architectural Design Studio.

5 hours. Five lab periods.

Prerequisite: LAR 320.

Design involving larger structures, more complex circulation requirements, modular coordination and the philosophy of architecture.

323. Landscape Ecology. 5 hours. Five lecture/lab periods.

Prerequisite: Permission of school.

Exploration of the ecological relationship of man and his environment in an effort to seek a scientific basis for planning action.

333. Advanced Architectural Design Studio. 5 hours. Five lab periods.

Prerequisite: LAR 320.

Projects requiring the solution of structural, material and circulation functions. Further study of design philosophy.

340. Professional Practice in Landscape Architecture. 5 hours.

Professional practice and ethics; contracts, reports, and specifications.

343. Graphics I. 5 hours. Five lab periods.

Principles of orthographic projection, isometric drawing, one and two point perspective. Emphasis on lettering, composition and graphic presentation.

344. Graphics II. 5 hours. Five lab periods.

Prerequisite: LAR 343.

Use of perspective, drawing and various rendering techniques in presentation plans.

345. Communication Techniques for Landscape Architects. 5 hours. Four hours lecture and one 2-hour lab period.

Non-graphic communication techniques for landscape architects. Development of skills in communicating projects, reports, and programs through the use of various media.

350. Landscape Engineering. 5 hours. Five lecture/lab periods.

Prerequisite: LAR 357 and ET 310 or permission of school.

Review of contour principles, grading, earth volume calculations, drainage, coordinates and layout techniques. Introduction to the automobile as it relates to site planning and low-speed road design.

351. Plant Materials. 5 hours.

Prerequisite: BOT 121-121L, HOR 325 or 362.

A study of plant materials with emphasis on identifying characteristics, natural habitat and cultural requirements. Primarily trees, shrubs and vines.

352. Plant Materials. 3 hours.

Prerequisite: BOT 121-121L, HOR 325 or 362.

A continuation of LAR 351 with emphasis on herbaceous plant materials.

354. Planting Design II. 5 hours. Five lab periods.

Prerequisite: LAR 304.

Use of plant material in relation to other landscape elements. Specific problems calling for the knowledge of plant characteristics and requirements. Preparation of planting plans and specifications.

355. Senior Design Project. 5 hours. Five lab periods.

Prerequisite: Second quarter senior standing or permission of school.

A comprehensive problem in environmental design in which the student is able to demonstrate the proficiency acquired from the program of study.

357. Landscape Construction. 5 hours. Five lab periods.

Prerequisite: LAR 344.

An introduction to wood construction, sprinkler irrigation, retaining wall calculations, and construction drawings. Investigation of construction materials in the landscape.

358. Advanced Landscape Engineering. 5 hours. Five lab periods.

Prerequisite: LAR 350.

The application of site engineering principles to specific design projects.

372. History of Landscape Design. 5 hours.

Development of the art of landscape design from early cultures to the present with special stress upon the transition of styles and the development of the naturalistic and contemporary periods.

373. History and Theory of Architecture. 5 hours.

Prerequisite: LAR 372 or permission of school.

A survey of the principal periods of architectural history with particular emphasis on the rationale of each development. Open to all majors of all colleges and departments.

410, 411, 412. LAR Internship I, II and III. 5 hours each.

Prerequisite: Junior standing or permission of school.

Provides credit for professional office experience under the supervision of registered landscape architects or related practitioners (architects, engineers, planners). A minimum of two months full-time supervised employment per 5 credit hours.

418AB. Independent Projects I and II. 5 hours each.

Prerequisite: Fifth year standing and permission of school.

Independent projects allowing supervised research into specialized problem areas of landscape architecture. May be substituted for other fifth year course work.

453. City Planning. 5 hours.

Prerequisite: LAR 372 or permission of school. Background course in city planning covering the history and bibliography of the subject and introducing the students to modern trends in planning. Designed as a foundation for further study of professional planning.

496H, 497H, 498H. Independent Projects in Landscape Architecture. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis in Landscape Architecture. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field. This course will substitute for LAR 355.

520. (GLY) Environmental Geology. 5 hours. See GLY 520.

523. Environmental Analysis. 5 hours.

Prerequisite: LAR 323.

Techniques for the survey and analysis of natural processes at the site planning scale with an emphasis on field studies and computer applications.

525. Regional Recreation Planning. 5 hours.

Three 1-hour lectures and two 1-hour lab periods.

Prerequisite: Upper division standing and REC 384.

An approach to regional scale recreation planning. Studies of existing regional land use recreation programs, their significance and implications to individual park planning. A look at space requirements, policies and financial considerations in the design profession.

527. Park Design. 3 hours. One 1-hour lecture and two 1-hour lab periods.

Prerequisite: LAR 525.

The study and formulation of master plans for specific recreational sites. Problems in diagramming of land use, site surveys, staging developments and planting design principles.

THE SCHOOL OF FOREST RESOURCES

ADMINISTRATIVE OFFICER

Leon A. Hargreaves, B.S.F., M.S.F., M.P.A., Ph.D., *Dean*

GENERAL INFORMATION

The School of Forest Resources was established through the generosity of George Foster Peabody in 1906. It is the oldest such institution still in existence in the South and is fully accredited by the Society of American Foresters. The School is ideally situated for its role as a regional school because it is readily accessible to the three major forest provinces of the southeastern United States: mountain, piedmont, and coastal plain.

Purpose

The goal of the School of Forest Resources is to educate students in the management of forest resources for maximum human benefit. This involves: 1) understanding the forest environment; 2) competent application of professional skills; 3) skilled interpretation of forest resources management and science philosophy, policies, and procedures to society at large.

Facilities

The School of Forest Resources' building complex is centrally located on the South Campus. It is convenient to the Science Library and Graduate Studies Research Center, Center for Continuing Education, Coliseum, married student housing, major parking areas, and campus bus routes. The complex is free of traffic congestion but is readily accessible from all directions by major traffic arteries.

The original building, dating from 1938, was thoroughly modernized in 1968 following completion of an adjoining six story building with connecting auditorium and offices. All classrooms, offices, and laboratories are climate controlled. Equipment includes computer terminals, computer graphics hardware, micro-

computers, and scientific apparatus for teaching and research in all branches of forestry.

Adjacent buildings house the Institute of Ecology, the Institute of Natural Resources, and the U. S. Forest Service. These agencies and the School of Forest Resources maintain close working relationships to enhance solution of regional land and resource management problems.

The School operates the 750-acre Whitehall forest four miles from the main campus. The forest serves as a field laboratory and a depot for equipment maintenance and storage. Located here are an operational and demonstration sawmill, a modern forest nursery, an extensive arboretum, a series of ten fishponds, and deer holding areas for wildlife research. Deer also roam freely throughout the forest. Listed on the National Register of Historic Places, the White Mansion has been restored and is used for school-related functions. Flinchum's Phoenix, an unusual recreation building with adjacent areas for forestry field day and other functions, is available for forestry and related University activities. A wildlife and fisheries laboratory is also located in the forest.

Other forested areas, convenient to the School and used for teaching and research, include the Oconee Forest Park on the edge of the campus; its Lake Herrick is for recreational use and research projects. The B. F. Grant Memorial Forest of 13,000 acres in Putnam County is used for management studies and research. The School recently acquired the Thompson Mill Forest, a Jackson County tract of several hundred acres, for field laboratory use and arboretum development. Smaller forest areas within a short travel time of Athens add an additional 1,000 acres for teaching and research use. The 1500-acre Satilla River Forest in the flatwoods of Camden County is available for wildlife and fisheries research.

Undergraduate Study

The academic program at the undergraduate level consists of two parts: the pre-professional forest resources program, which may be taken during the student's first two years either in the University's School of Forest Resources or at another institution; and the professional forest resources program, to be completed at the School of Forest Resources.

If taking the required courses at another institution, students and their advisors should coordinate with an advisor at the School of Forest Resources, (404) 542-5576.

Pre-Forest Resources Program

	HOURS
HUMANITIES	
ENG 102	5
SPC 108	5
CML 221, 222, ENG 231G, 232G, or 233G	5
Elective ¹	5
MATHEMATICS AND NATURAL SCIENCE	
MAT 116, 253 ²	10
BIO 101-101L, 102-102L	10
CHM 121 and 121L, 122 and 122L, 261 and 261L	15
PCS 127-127L	5
CSC 201	5
Additional Mathematics or Natural Science ³	5
SOCIAL SCIENCE	
ECN 105, 106	10
POL 101	5
HIS 251 or 252	5
TOTAL	90

Professional Program

To be admitted to the professional forest resources program in the School of Forest Resources, a student must complete the pre-professional requirements. The two years of pre-professional education require satisfactory completion of the specified program of not less than 90 quarter hours in the arts and sciences, as well as the general requirements

¹Such as Art, Drama, English, Music, Philosophy, Religion, or any foreign language at the intermediate level.

²MAT 109 may be substituted for 116; students admitted directly to MAT 253 will take MAT 254 or 5 quarter hours approved by the School of Forest Resources Admissions Committee.

³Students selecting the fish and wildlife concentration in the professional program must take ZOO 326-326L. Other students must take a math or science course which requires a prerequisite already in the core

for basic physical education. Students having 90 hours of credit may be admitted with not more than 5 quarter hours of deficiency in required courses, provided such deficiency is in the Humanities or Social Sciences and is approved by the School of Forest Resources Admissions Committee. Such deficiency will be completed at an appropriate time during the professional program.

Applications for admission to the School of Forest Resources should be submitted *no later* than April 1 for Fall quarter admission or September 1 for Winter quarter admission. Application forms should be requested from the Admissions Committee, School of Forest Resources. To be considered for admission to the professional program, a candidate must have a 2.5 or higher grade average (based on a 4.0 maximum) in the pre-professional coursework.

In addition, students must apply for admission to the University on application forms furnished by The University of Georgia Admissions Office. These applications should be requested and filed well in advance of anticipated entrance. Transcripts showing all college work must be forwarded to the Admissions Office by each college attended.

Financial Aid

In addition to student loans and scholarships available through the University Office of Student Financial Aid, the School of Forest Resources administers the awarding of approximately \$40,000 annually in industry donated and endowed awards and scholarships. Besides awards ranging from \$100 to \$2,000, several full tuition undergraduate scholarships are provided by two funds—one resulting from a bequest from the late William Tyler Ray and the other contributed from the School of Forest Resources alumni. Applications for these scholarships can be made on the School of Forest Resources admissions application. Selection will be based on academic achievement, proven leadership ability, personal references, and financial need.

Degree Offered

The School of Forest Resources offers the undergraduate degree of Bachelor of Science in Forest Resources. Areas of concentration include: forest management, forest water resources, fish and wildlife biology, and forestry sciences.

Courses required in the professional core and concentration areas, as well as descrip-

tions of all courses and details of other academic matters, appear in the separate School of Forest Resources Bulletin, which may be obtained by writing to the Dean, School of Forest Resources, The University of Georgia, Athens, Georgia 30602.

Graduate Study

Through the Graduate School of the University, the following advanced degrees are offered: Master of Science, Master of Forest Resources, and Doctor of Philosophy in all disciplines related to forest resources. See the Graduate School Bulletin for further information.

Non-Professional Courses Open to all Students:

170. Orientation to Forestry. 1 hour.

A survey course intended to familiarize the student with the practice and profession of forestry.

573. Economics and Principles of Management of Southern Forests. 5 hours.

Prerequisite: Permission of school.

Study of economic importance and opportunities of forest lands and associated resources; renewable vs. non-renewable resources; principles of management of timber, water, wildlife, recreational and related resources; and introduction to public, private, and industrial forest land management practices.

THE COLLEGE OF HOME ECONOMICS

ADMINISTRATIVE OFFICER

Emily Q. Pou, B.S., M.S., Ph.D., *Dean*

GENERAL INFORMATION

Accreditation

The College of Home Economics is accredited by the American Home Economics Association.

Purpose and Organization

The College of Home Economics offers education for a number of professional careers and, in addition, prepares students for effective personal and family life. The curricula provide well-rounded programs of general scientific education.

About one half of the requirements for the home economics degree are planned to provide general education for personal enrichment and to serve as a base on which to build specialized professional courses. The remainder of the courses provide training for professions. Twenty majors are available. The combined major areas permit a student to acquire a major in one of the departmental programs as well as achieve certification for teaching in the public school system. These programs are listed under the section Combined Major Programs. Men and women students from other schools and colleges in the University may take courses in home economics.

Career Opportunities

Many diverse career opportunities are open to the graduate of the College of Home Economics. A student may prepare for an educational career in elementary, middle or high schools; vocational technical schools; nursery schools; kindergartens; in preschool programs for children in hospitals and day care centers; in youth group or adult group work; an industrial career in commercial and financial companies, consultant firms, in merchandis-

ing, product development laboratories, public utilities, and trade and industrial associations; a communications career in advertising, newspapers, magazines and trade journals, in radio and television; or a career in dietetics and institutional administration and food industries.

Facilities

Dawson Hall and Speirs Hall, located on South Campus, house the modern and fully equipped teaching laboratories and classrooms for equipment, foods, nutrition, textiles, clothing, housing and home furnishings, as well as research laboratories, and an auditorium.

Four home management residence laboratories serve as teaching laboratories for home management and residential lighting. Students living there in small groups for a quarter's residence gain experience in applying their training to a family situation.

The Margaret E. McPhaul Child and Family Development Center houses laboratories for instructional and research activities which provide opportunities for observations of and work with normal infants, children under six, parents, and families. In addition, facilities at the Athens Unit of the Georgia Retardation Center provide instructional, research, observational, and participation opportunities with retarded individuals ages two through twenty-one and their families.

Degree Offered

The College of Home Economics offers the degree of Bachelor of Science in Home Economics.

Graduate Study

The College of Home Economics offers graduate study in several phases of work leading to either the Master of Science degree or the Master of Home Economics degree and the Doctor of Philosophy degree in Child and Family Development and Foods and Nutrition, administered by the Graduate School.

For further information, refer to the Graduate School Bulletin.

Degree Requirements

A student should become acquainted with the general degree requirements applicable to all students of the University as set down in the general information section of this bulletin.

Hours

A total of 195 quarter hours is required for the Bachelor of Science in Home Economics degree.

Choosing a Major

The major must be declared upon entering the College of Home Economics. The course of study should conform to one of the plans listed under the respective major. Minor changes in programs may be made upon recommendation of the major professor with approval of the department head and dean.

Honors Program

Qualified students are encouraged to participate in both junior and senior division honors programs. Home economics honors courses are listed under the respective departments. Graduation with Honors in Department is available in all departments. Interested students should consult the Honors Program Student Handbook.

BACHELOR OF SCIENCE IN HOME ECONOMICS DEGREE REQUIREMENTS

Core Curriculum

For general information on the core curriculum, see the Core Curriculum in the Academic Program section of this Bulletin.

	HOURS
AREA I HUMANITIES	20
ENG 101, 102	10
Literature: Select from CLC 120, 121, CML 221, 222, ENG 231G, 232G, 233G	5
Speech, drama, religion, art, music, literature, philosophy (other than logic)	5
AREA II MATHEMATICS AND NATURAL SCIENCE	20
Astronomy, biology, botany, chemistry, physical geography, geology, mathematics, physics, physiology, statistics, PHY 110, zoology	5

Mathematics: Select from MAT 100, 105, 109, 116, 253	5
Laboratory sequence: At least 10 hours must be taken in one laboratory science sequence from biology, botany, chemistry, physics, physiology, zoology, geography with lab, geology with lab, physical science with lab	10

AREA III SOCIAL SCIENCES	20
Introductory anthropology, economics, psychology or sociology as appropriate to intended major	5
Social Sciences: Hours not specified for a designated major should be selected from anthropology, economics, human geography, psychology or sociology	5
History*	5
Political Science*	5

AREA IV COURSES RELATED TO MAJOR	30
Home economics courses from family relations, food, clothing and housing	15
Courses specified for a particular major including, but not limited to, art, physical or social sciences	15

Other Degree Requirements

The following four 5-hour courses totalling 20 hours are required of all students pursuing the Bachelor of Science in Home Economics degree: CFD 210; CTI 210; FDN 210; and HMC 210.

Any courses exempted with or without credit by advanced placement shall satisfy the specific degree requirement; courses exempted without credit may be replaced by free electives.

All academic regulations of the University in respect to residence and degree requirements must be satisfied.

Total Academic Hours (minimum)	195
This total includes 190 academic hours required by the College of Home Economics to satisfy degree requirements, plus five hours of Basic Physical Education to satisfy University requirements. This total excludes any credit hours for basic ROTC.	

Major

The twenty majors are described under the areas of Child and Family Development; Clothing, Textiles, Interiors and Furnishings; Foods and Nutrition; Housing, Home Management

*If needed to satisfy history/constitution requirements.

and Consumer Economics; Home Economics Education; and Home Economics and Journalism.

Child and Family Development (CFD)

The undergraduate program in the Department of Child and Family Development focuses on the study of individual and family development over the life cycle. Students are involved in many experiences in the classroom and community that enable them to gain an understanding of self and others and develop skills in helping individuals and families. Many varied types of careers are available to Child and Family Development graduates.

Child Development

Teaching/Administration in Non-Public School Programs

Preparation for work with children and their families in non-public preschool programs; Cooperative Extension; business; child serving agencies, as administrators in federal, state, and private preschool programs and day care; and as workers in day care licensing, children's clinics, and with children's book and toy companies.

REQUIRED COURSES	HOURS
CFD 390 Prenatal and Infant Development	5
CFD 393 Family Relations	
or	
CFD 470 The Family and Adolescence	5
*CFD (PSY) 395 Introduction to Child Development	5
CFD 407 A Survey of Marriage and Family Problems	
or	
CFD 497 Marriage, Family, and Human Sexuality	5
CFD 494 Research Methods in Child and Family Development	5
CFD 495 Contemporary Family Life	5
CFD 496 Guidance of Children and Parents	5
CFD 500 Infant/Preschool Program Observation Methods and Skills	2
CFD 592 Theory and Practice of Group Programs for Children under Six	15
CFD 594 Nursery School and Kindergarten Theories and Administration	5
CFD 598A Practicum in Child and Family Development: Group Programs for children under six	
or	
CFD 598D Practicum in Child and Family Development: Administration	10

*This prefix required for certification purposes.

HMC 364 Principles of Family Economics	5
PSY 101 Elementary Psychology	5
SOC 105 Introductory Sociology	5
Electives	38

Child Development

Hospital Child Life Program

Preparation for work with children in hospitals and other medical settings. Emphasis is focused on the development of programs for children who have special needs, and on providing internship experiences with children in hospitals.

REQUIRED COURSES	HOURS
CFD 390 Prenatal and Infant Development	5
*CFD (PSY) 395 Introduction to Child Development	5
CFD 470 The Family and Adolescence	5
CFD 491 Hospitalized Child & The Family	5
CFD 494 Research Methods in Child and Family Development	5
CFD 495 Contemporary Family Life	5
CFD 496 Guidance of Children and Parents	5
CFD 500 Infant/Preschool Program Observation Methods and Skills	2
CFD 592 Theory and Practice of Group Programs for Children Under Six	15
CFD 594 Nursery School and Kindergarten Theories and Administration	5
CFD 598E Practicum in Child and Family Development: Hospital Child Life Program	15
EIA 332 Industrial Arts and Handicrafts	5
HMC 364 Principles of Family Economics	5
BIO 101-101L, 102-102L Principles of Biology	10
ZOO 212-212L Human Anatomy	5
PSY 101 Elementary Psychology	5
SOC 105 Introductory Sociology	5
Select 5 hours from:	5
CFD 393 Family Relations	
CFD 407 A Survey of Marriage and Family Problems	
CFD 497 Marriage, Family, and Human Sexuality	
Electives	23

Child Development

Child Development and Home Economics Education

Preparation for certification to teach child development at the secondary level in home economics.

REQUIRED COURSES	HOURS
CFD 390 Prenatal and Infant Development	5
*CFD (PSY) 395 Introduction to Child Development	5
CFD 495 Contemporary Family Life	5
CFD 496 Guidance of Children and Parents	5
CFD 500 Infant/Preschool Program Observation Methods and Skills	2
CFD 592 Theory and Practice of Group Programs for Children Under Six	15
or	
CFD 591 Creative Activities in Nursery School and Kindergarten	5
and	
CFD 598A Practicum in Child and Family Development: Group Programs for Children Under Six	10
CTI 222 Principles of Creative Clothing	5
CTI 321 Advanced Clothing Selection and Construction	5
FDN 350 Meal Planning and Serving	5
FDN 351 Foundations of Nutrition	5
HMC 343 Selection, Use and Care of Household Equipment	5
HMC 364 Principles of Family Economics	5
HMC 368 Individual and Home Management	5
HMC 369 Home Management Residence Laboratory	5
*EAV (ESS) 401 Basic Instructional Media Competencies	3
EPY 304 Learning and Motivation	or
EPY 305 Adolescent Psychology	5
EVO 555 Teaching Vocational Education to Students with Special Education Needs	5
EHE 335 Basic Curriculum Planning in Home Economics Education	5
EHE 336 Teaching Procedures in Home Economics Education	5
EHE 345 AB September School Practicum in Home Economics Education	2
EHE 546 Student Teaching in Home Economics Education	15
SPC 108 Fundamentals of Speech Communication	5
CHM 111 Elementary Chemistry	4
CHM 111L Elementary Chemistry Laboratory	1
CHM 261 Elementary Organic Chemistry	4
CHM 261L Elementary Organic Chemistry Laboratory	1
PSY 101 Elementary Psychology	5
SOC 105 Introductory Sociology	5

Select 5 hours from:

- CFD 393 Family Relations
- CFD 407 A Survey of Marriage and Family Problems
- CFD 408 Development of the Young Child
- CFD 470 The Family and Adolescence or
- CFD 497 Marriage, Family, and Human Sexuality

Child and Family Development

Although students from all majors may enter graduate school, this concentration is especially designed for use for students whose main interest is to pursue advanced degrees leading to research and/or college teaching and research. Student must have a minimum cumulative grade point average of 3.0.

REQUIRED COURSES	HOURS
CFD 390 Prenatal and Infant Development	5
CFD 393 Family Relations	or
CFD 470 The Family and Adolescence	5
*CFD (PSY) 395 Introduction to Child Development	5
CFD 407 A Survey of Marriage and Family Problems	or
CFD 497 Marriage, Family, and Human Sexuality	5
CFD 494 Research Methods in Child and Family Development	5
CFD 495 Contemporary Family Life	5
CFD 496 Guidance of Children and Parents	5
PSY 101 Elementary Psychology	5
SOC 105 Introductory Sociology	5
HMC 364 Principles of Family Economics	5
Related area of Concentration	20
Electives	45

Child Development — Early Childhood Education

A joint program with the College of Education, the program prepares students for certification to teach children in preschool through fourth (K-4 certification) grade settings in public and private schools.

REQUIRED COURSES	HOURS
MUS 303 Music Skills and Fundamentals for Elementary School Teachers	3
MUS 305 Music Methods and Materials for Early Childhood Teachers	3

*This prefix required for certification purposes.

CFD 496 Guidance of Children and Parents	5
CFD 500 Infant/Preschool Program Observation Methods and Skills	2
CFD 592 Theory and Practice of Group Programs for Children under Six	15
CFD 598A Practicum in Child and Family Development: Group Programs for Children Under Six	10
EEN 300 Children's Literature	3
EFN 303 Introduction to Education	5
PED 442 Movement Education for the Young Child	5
EXC 500 Introduction to Exceptional Children	5
EPY 304 Learning and Motivation	5
ECE 302 Orienting Practicum	5
EEN 405 The Written Language Arts — Early Childhood Education	3
EMT 441 Mathematics Learning: K-4	3
EMT 442 Mathematics Methods in Early Childhood Education	3
ERD 342 Teaching of Reading to Early Elementary Children	5
ECE 333 Primary School Program and Curriculum Development	5
ERD 343 Corrective Reading in the Early Elementary Grades	5
ESC 442 Science for Early Childhood Education	5
ESS 342 Early Childhood Social Studies	5
ECE 546 Student Teaching in Early Childhood Education	15
ART 305 Art and the Child	5
MAT 205, 206 Mathematics for Elementary Teachers	10
PSY 101 Elementary Psychology	5
PSY (CFD) 395 Introduction to Child Development	5
Select 5 hours from:	5
CFD 390 Prenatal and Infant Development	
CFD 407 A Survey of Marriage and Family Problems	
CFD (SOC) 461 The Family	
CFD 492 Individual and Family Development Facilitation	
CFD 495 Contemporary Family Life	
CFD 497 Marriage, Family, and Human Sexuality	
Select 10 hours from:	10
BIO 101-101L, 102-102L Principles of Biology	
BIO 105 Biology for Elementary Teachers, an Ecological Approach	
BIO 106 Biology for Elementary Teachers, a Cultural Approach	
or	

BOT 121-121L, 122-122L Elementary Botany

Child Development—Mental Retardation

A cooperative program with the College of Education, the program prepares students for teaching certification in MR (special emphasis on children who are moderately to severely mentally retarded) and for work with mentally retarded individuals in child care centers, schools, group homes and other residential institutions.

REQUIRED COURSES	HOURS
CFD 496 Guidance of Children and Parents	5
CFD 598C Practicum in Child and Family Development: Programs for mentally retarded children and their families	5
EXC 500 Introduction to Exceptional Children	5
EXC 504 Nature of Mental Retardation	5
EXC 509S Practicum in Special Education	5
EXC 595 Teaching the Severely Mentally Retarded	5
EXC 546S Student Teaching in Special Education	15
*EAV (ESS) 401 Basic Instructional Media Competencies	3
EFN 303 Introduction to Education or	
EPH 380 Introductory Philosophy of Education	5
EPY 304 Learning and Motivation	5
EPY 500 Educational Tests and Measurements	5
ERD 401 The Teaching of Reading	5
PSY 101 Elementary Psychology	5
PSY (CFD) 395 Introduction to Child Development	5
Select 15 hours from:	15
CFD 390 Prenatal and Infant Development	
CFD 407 A Survey of Marriage and Family Problems	
CFD (PSY) 408 Development of the Young Child	
CFD 409 Infant Development	
CFD 492 Individual and Family Development Facilitation	
CFD 500 Infant/Preschool Program Observation Methods and Skills	
EAR 400 Special Problems in Art Education	
EPY 506 Classroom Learning Problems of Disadvantaged Children	
SPA 481 Basic Manual Communication	

*This prefix required for certification purposes.

Select 20 hours from:	20
CFD 301 Special Problems in Child and Family Development	
EXC 501 Principles of Assessment of Exceptional Children	
EXC 505 Behavior Management with Exceptional Children	
EXC 507 Secondary School Programming for the Mentally Retarded	
EXC 508 Curriculum for the Educable Mentally Retarded	
EXC 520 Emotionally Disturbed Children in the Classroom	
REC 537 Recreation for the Mentally Retarded	
SPA 451 Speech and Language Problems in the Classroom	
Electives	7

Family Development

Prepares students for work with agencies dealing with family adjustment such as the Cooperative Extension Service, family-serving agencies, programs for the aged, or positions requiring professional work with family life as a focus.

REQUIRED COURSES	HOURS
CFD 390 Prenatal and Infant Development	5
CFD 393 Family Relations	
or	
CFD 470 The Family and Adolescence	5
*CFD (PSY) 395 Introduction to Child Development	5
CFD 407 A Survey of Marriage and Family Problems	
or	
CFD 497 Marriage, Family, and Human Sexuality	5
CFD 494 Research Methods in Child and Family Development	5
CFD 495 Contemporary Family Life	5
CFD 496 Guidance of Children and Parents	5
HMC 364 Principles of Family Economics	5
ECN 105 Principles of Macroeconomics	5
PSY 101 Elementary Psychology	5
SOC 105 Introductory Sociology	5
Related area of concentration	30
Electives	35-40

Family Development

Family Life and Home Economics Education
Prepares students for certification to teach family life at the secondary level in home economics.

REQUIRED COURSES	HOURS
CFD 390 Prenatal and Infant Development	5
CFD 393 Family Relations	
or	
CFD 470 The Family and Adolescence	5
*CFD (PSY) 395 Introduction to Child Development	5
CFD 407 A Survey of Marriage and Family Problems	
or	
CFD 497 Marriage, Family, and Human Sexuality	5
CFD 494 Research Methods in Child and Family Development	5
CFD 495 Contemporary Family Life	5
CFD 496 Guidance of Children and Parents	5
CTI 222 Principles of Creative Clothing	5
CTI 321 Advanced Clothing Selection and Construction	5
FDN 350 Meal Planning and Serving	5
FDN 351 Foundations of Nutrition	5
HMC 343 Selection, Use and Care of Household Equipment	5
HMC 364 Principles of Family Economics	5
HMC 368 Individual and Home Management	5
HMC 369 Home Management Residence Laboratory	5
*EAV (ESS) 401 Basic Instructional Media Competencies	3
EPY 304 Learning and Motivation	
or	
EPY 305 Adolescent Psychology	5
EVO 555 Teaching Vocational Education to Students with Special Education Needs	5
EHE 335 Basic Curriculum Planning in Home Economics Education	5
EHE 336 Teaching Procedures in Home Economics Education	5
EHE 345AB September School Practicum in Home Economics Education	2
EHE 546 Student Teaching in Home Economics Education	15
SPC 108 Fundamentals of Speech Communication	5
CHM 111 Elementary Chemistry	4
CHM 111L Elementary Chemistry Laboratory	1
CHM 261 Elementary Organic Chemistry	4
CHM 261L Elementary Organic Chemistry Laboratory	1
ECN 105 Principles of Macroeconomics	5
PSY 101 Elementary Psychology	5
SOC 105 Introductory Sociology	5

*This prefix required for certification purposes.

Clothing, Textiles, Interiors, and Furnishings (CTI)

Clothing and Textiles

This undergraduate major provides the basic foundation for those students who desire to pursue professional development in the clothing and textiles area. It affords a general curriculum designed to develop the background of knowledge essential for continuing professional growth. The program is designed for students desiring to pursue careers in one of the many industries related to clothing and textiles.

REQUIRED COURSES	HOURS
CTI 200 Seminar in Clothing, Textiles, Interiors and Furnishings	1
CTI 222 Principles of Creative Clothing	5
CTI 320 Textiles	4
CTI 320L Textiles Laboratory	1
CTI 321 Advanced Clothing Selection and Construction	5
CTI 325 Textile Testing	5
CTI 375 Residential Interiors and Furnishings	5
CTI 420 Advanced Textiles	5
CTI 464 History of Costume: Antiquity to 19th Century	
or	
CTI 465 History of Costume from 19th Century to Present	5
CTI 561 Clothing and Textiles Economics	5
CTI 565 Techniques in Construction on Current Fabrics	5
CTI (Clothing and Textiles) options	20
ART 120 or 230 Art Structure	
or	
ART 287 Introduction to the History of Ancient and Medieval Art	
or	
ART 288 Introduction to the History of Art, Renaissance—18th Century	
or	
ART 289 Introduction to 19th and 20th Century Art	5
SPC 108 Fundamentals of Speech Communication	
or	
SPC 267 Introductory Interviewing	5
MAT 116 Precalculus Mathematics	
or	
MAT 207 Mathematical Analysis for Business I	5
STA 200 Elementary Statistics	5
CHM 121 and 122 General Chemistry and CHM 121L and 122L General Chemistry Labs	10
ECN 106 Principles of Microeconomics	5
PSY 101 Elementary Psychology	5

MKT 360 Principles of Marketing	5
Related Concentration:	15
Art	
Business	
Computer Science	
Drama	
Journalism	
Electives	19

Clothing and Textiles

Textile Science

The concentration in textile science has been designed to provide the student with the technical and theoretical proficiencies and competencies needed to obtain a position in the textile industry. Textile science majors are employed in a variety of exciting and rewarding positions by governmental agencies, private and commercial industries and institutions. The program is flexible enough to permit the student to explore a variety of related areas including business, chemistry and computer science.

REQUIRED COURSES	HOURS
CTI 200 Seminar in Clothing, Textiles, Interiors and Furnishings	1
CTI 320 Textiles	4
CTI 320L Textiles Laboratory	1
CTI 325 Textile Testing	5
CTI 420 Advanced Textiles	5
CTI 445 Textile Dyeing	5
CTI 520 Physical Analysis of Textiles	5
CTI 525 Chemical and Optical Analysis of Textiles	5
CTI 535 Textile Finishing Processes	5
SPC 108 Fundamentals of Speech Communication	
or	
SPC 267 Introductory Interviewing	5
CHM 121 and 122 General Chemistry and CHM 121L and 122L General Chemistry Labs; CHM 240 and 241 Fundamental Organic Chemistry and CHM 240L and 241L Fundamental Organic Chemistry Labs	20
PCS 127-127L Introductory Physics—Mechanics and Wave Motion	
or	
PCS 137-137L Introductory Physics for Science and Engineering Students—Mechanics	5
PCS 128-128L Introductory Physics—Thermodynamics, Electricity and Magnetism	
or	
PCS 138-138L Introductory Physics for Science and Engineering Students—Thermodynamics, Electricity and Magnetism	5

STA 200 Elementary Statistics	5	MAT 103 Fundamentals of Mathematics for Business	5
ECN 105 Principles of Macroeconomics or		CHM 121 and 122 General Chemistry and CHM 121L and 122L General Chemistry Labs	10
ECN 106 Principles of Microeconomics	5	STA 200 Elementary Statistics	5
PSY 101 Elementary Psychology	5	ECN 106 Principles of Microeconomics	5
MAT 116 Precalculus Mathematics	5	MAT 207 Mathematical Analysis for Business I	5
MAT 253 Analytic Geometry and Calculus	5	PSY 101 Elementary Psychology	5
MAT 254 Calculus	5	ACC 110 Principles of Accounting I or	
CSC 201 Introduction to Computing or		ACC 116 Survey of Accounting	5
MS 209 Introduction to Computers in Business	5	MKT 360 Principles of Marketing	5
Electives	19	MKT Senior Division	5

Fashion Merchandising Major

The purpose of the fashion merchandising major is to provide the undergraduate student with a basic understanding of merchandising related to the fashion industries. The program emphasizes the skills and competencies needed for careers in retailing, management, and fashion promotion. The curriculum is designed to develop a general background of knowledge essential for professional growth.

REQUIRED COURSES HOURS

CTI 200 Seminar in Clothing, Textiles, Interiors and Furnishings	1
CTI 222 Principles of Creative Clothing	5
CTI 320 Textiles	4
CTI 320L Textiles Laboratory	1
CTI 321 Advanced Clothing Selection and Construction or	
CTI 565 Techniques in Construction on Current Fabrics	5
CTI 325 Textile Testing	5
CTI 334 Introduction to Merchandising of Apparel, Textiles, and Furnishings	5
CTI 434 Fashion Image Development and Promotion	5
CTI 464 History of Costume: Antiquity to 19th Century or	
CTI 465 History of Costume from 19th Century to Present	5
CTI 534 Fashion Product Analysis	5
CTI 561 Clothing and Textile Economics	5
CTI (Clothing and Textiles) options	20
ART 120 or 230 Art Structure or	
ART 300 Appreciation of the Visual Arts	5
SPC 108 Fundamentals of Speech Communication or	
SPC 267 Introductory Interviewing	5

MAT 103 Fundamentals of Mathematics for Business	5
CHM 121 and 122 General Chemistry and CHM 121L and 122L General Chemistry Labs	10
STA 200 Elementary Statistics	5
ECN 106 Principles of Microeconomics	5
MAT 207 Mathematical Analysis for Business I	5
PSY 101 Elementary Psychology	5
ACC 110 Principles of Accounting I or	
ACC 116 Survey of Accounting	5
MKT 360 Principles of Marketing	5
MKT Senior Division	5
CSC 201 Introduction to Computing or	
MS 209 Introduction to Computers in Business	5
Electives	14

Furnishings and Interiors

This major emphasizes the consumer aspects of residential furnishings. The courses required for furnishings and interiors emphasize active experience with tools and materials needed for professional development. The courses are integrated so that a balance between theoretical and practical experiences is achieved. From this integration, the student derives a knowledge of basic principles underlying furnishings and interiors for residential uses. The major in furnishings and interiors provides opportunities for students wishing to pursue careers in retailing of furnishings.

REQUIRED COURSES HOURS

CTI 200 Seminar in Clothing, Textiles, Interiors and Furnishings	1
CTI 320 Textiles	4
CTI 320L Textiles Laboratory	1
CTI 325 Textile Testing	5
CTI 375 Residential Interiors and Furnishings	5
CTI 376 Residential Design	5
CTI 378 Interior Perspective and Media	5
CTI 475 Historical Homes and Furnishings	5
CTI 476 Decorative Accessories for the Home	5
CTI 477 Contemporary Home Furnishings	5
CTI 478 Fabrics for Furnishings and Interiors	5
CTI 571 Furnishings and Interiors for Various Income Levels	5
CTI 572 Furnishings Manufacturing and Retailing Industries	5
CTI (Interiors and Furnishings) options	20
ART 120 or 230 Art Structure	5
CHM 121 and 122 General Chemistry	

and CHM 121L and 122L General Chemistry Labs	10
MAT 103 Fundamentals of Mathematics for Business	5
STA 200 Elementary Statistics	5
ECN 105 Principles of Macroeconomics	or
ECN 106 Principles of Microeconomics	5
PSY 101 Elementary Psychology	or
SOC 105 Introductory Sociology	5
MAT 207 Mathematical Analysis for Business I	5
ACC 110 Principles of Accounting I	or
ACC 116 Survey of Accounting	5
MKT 360 Principles of Marketing	5
MKT Senior Division Electives	14

Foods and Nutrition (FDN)

There is a constant demand for food specialists, dietitians, quantity food production managers and nutrition scientists to combat the problems associated with needs for food by people of all ages. This demand has been intensified recently by the growing awareness of the relation of food and nutrient needs to health and well-being. The food industries need to have persons trained to evaluate consumer acceptance of their products as well as persons knowledgeable in the nutritional properties of food. The health industry as well as government is increasingly aware of the role of nutrition in health maintenance. Thus, employment opportunities are diverse and offer a variety of career choices.

Dietetics and Institution Management

This major meets the Plan IV requirements of the American Dietetic Association for admission to approved dietetic internships and for memberships. It prepares the student for administrative and therapeutic dietetics as well as for the teaching of dietetics and for the graduate year in hospital dietetics. Students are also prepared for school lunch or institutional management if electives are selected properly.

REQUIRED COURSES	HOURS
FDN 306 Foods	5
FDN 350 Meal Planning and Serving	5
FDN 351 Foundations of Nutrition	5
FDN 441 Advanced Nutrition I	5
FDN 442 Advanced Nutrition II	5
FDN 453 Nutrition in Disease	5
FDN 570 Quantity Food Production	5
FDN 573 Institutional Management I	5

FDN 574 Purchasing for Institutional Food Service	5
FDN 575 Institutional Management II	5
SPC 108 Fundamentals of Speech Communication	or
SPC (MAN) 256 Discussion Methods	or
SPC 267 Introductory Interviewing	5
STA 200 Elementary Statistics	or
STA 221 Introduction to Statistics and Programming I	5
BIO 101-101L, 102-102L Principles of Biology	10
CHM 111 and 112 Elementary Chemistry and CHM 111L and 112L Elementary Chemistry Labs	or
CHM 121 and 122 General Chemistry and CHM 121L and 122L General Chemistry Labs	10
CHM 240 and 241 Fundamental Organic Chemistry and CHM 240L and 241L Fundamental Organic Chemistry Labs	or
CHM 261 Elementary Organic Chemistry and CHM 261L Elementary Organic Chemistry Lab	5-10
ECN 105 Principles of Macroeconomics	5
SOC 105 Introductory Sociology	or
PSY 101 Elementary Psychology	5
*BCH (BIO) 310 Introductory Biochemistry	5
MIB 350-350L Introductory Microbiology	5
ZOO 213-213L Human Physiology	or
VPH 310 Elements of Physiology	5
EPY 304 Learning and Motivation	5

Major Course Options (Choose from the following):	10
FDN 301 Special Problems in Foods and Nutrition	
FDN 450 Food Theory and Application	
FDN 451 Safety and Efficacy of Food Additives	
FDN 455 Maternal and Child Nutrition	
FDN 458 Readings in Nutrition	
FDN 500 Nutrition Related to the Human Life Cycle	
FDN 555 Catering	
FDN 561 Computer Applications in Nutrition	
FDN 591 Foods and Nutrition Practicum	
*FS (MIB) 407-407L Microbiology of Foods	

*This prefix required for certification purposes.

ACC 110 Principles of Accounting I

or

ACC 116 Survey of Accounting

MAN 351 Management and Organizational Behavior

Electives 10-15

Experimental Foods

This major offers training to prepare students for positions relating to consumer education in foods and nutrition and research in food product development and recipe testing. This program also prepares students for graduate study in foods and nutrition. A student may confer with his/her advisor in the selection of a sequence of electives to meet individual professional interests.

REQUIRED COURSES HOURS

FDN 306 Foods 5

FDN 350 Meal Planning and Serving 5

FDN 351 Foundations of Nutrition 5

*FDN (FS) 426 Sensory Principles and Practices 5

FDN 441 Advanced Nutrition I 5

FDN 442 Advanced Nutrition II 5

FDN 450 Food Theory and Application 5

FDN 451 Safety and Efficacy of Food Additives 5

FDN 453 Nutrition in Disease 5

CHM 121 and 122 General Chemistry and CHM 121L and 122L General Chemistry Labs 10

CHM 240 and 241 Fundamental Organic Chemistry and CHM 240L and 241L Fundamental Organic Chemistry Labs

or

CHM 261 Elementary Organic Chemistry and CHM 261L Elementary Organic Chemistry Lab 5-10

MIB 350-350L Introductory Microbiology 5

*BCH (BIO) 310 Introductory Biochemistry 5

VPH 310 Elements of Physiology

or

ZOO 213-213L Human Physiology 5

BIO 101-101L, 102-102L Principles of Biology 10

STA 200 Elementary Statistics

or

STA 221 Introduction to Statistics and Programming I 5

*FS (MIB) 407-407L Microbiology of Foods 5

FS 409-409L Community and Home Food Preservation 5

Electives 20-25

Food Service Management

The Food Service Management program prepares students for management of school, industrial, nursing home and commercial cafeterias, and restaurants.

REQUIRED COURSES HOURS

FDN 306 Foods 5

FDN 350 Meal Planning and Serving 5

FDN 351 Foundations of Nutrition 5

FDN 570 Quantity Food Production 5

FDN 573 Institutional Management I 5

FDN 574 Purchasing for Institutional Food Service 5

FDN 575 Institutional Management II 5

SPC 108 Fundamentals of Speech Communications

or

SPC (MAN) 256 Discussion Methods

or

SPC 267 Introductory Interviewing 5

BIO 101-101L, 102-102L Principles of Biology 10

CHM 111 and 112 Elementary Chemistry and CHM 111L and 112L Elementary Chemistry Labs

or

CHM 121 and 122 General Chemistry and CHM 121L and 122L General Chemistry Labs

and

CHM 261 Elementary Organic Chemistry and CHM 261L Elementary Organic Chemistry Lab 15

ECN 105 Principles of Macroeconomics 5

PSY 101 Elementary Psychology

or

SOC 105 Introductory Sociology 5

MIB 350-350L Introductory Microbiology 5

ACC 110 Principles of Accounting

or

ACC 116 Survey of Accounting I 5

MAN 351 Management and Organizational Behavior 5

Major Course Options (Choose from the following): 10

FDN 301, 441, 442, 450, 451, 453, 454, 555, 557, 561, 591 plus any course from Supporting Course Options

Supporting Course Options (Choose from the following): 25

ACC 111 or BL 270-270L, *BCH(BIO) 310, ECN 386 or *PSY(MAN) 586, EPY 304 or 305, HMC 343, MAN 554, 582, 585 or 595 or PSY 414, MAN 588, 589, MKT 360, STA 200 or 221 or MS 209, 312, VPH 310 or ZOO 213-213L

Electives 15

*This prefix required for certification purposes.

Nutrition Science

This major is designed to provide basic training in nutrition and related sciences. Students interested in research, college teaching, or administrative positions in nutrition will be prepared for advanced study with this concentration. Selection of appropriate electives permits adaptation of this major to the student's primary interest area. This major is an excellent preparation for entry into the various fields of medicine.

REQUIRED COURSES	HOURS
FDN 351 Foundations of Nutrition	5
FDN 441 Advanced Nutrition I	5
FDN 442 Advanced Nutrition II	5
CHM 121 and 122 General Chemistry and CHM 121L and 122L General Chemistry Labs, CHM 123 Qualitative Analysis and CHM 123L Qualitative Analysis Lab, CHM 240 and 241 Fundamental Organic Chemistry and CHM 240L and 241L Fundamental Organic Chemistry Labs, CHM 280 Quantitative Inorganic Chemistry and CHM 280L Quantitative Inorganic Chemistry Lab	30
BCH 401, 402 Intermediate Biochemistry and BCH 403 Laboratory Techniques in Biochemistry	15
BIO 101-101L, 102-102L Principles of Biology	10
VPH 310 Elements of Physiology, or ZOO 213-213L Human Physiology, or PHR 349 Medical Physiology and Pathophysiology I and PHR 350 Medical Physiology and Pathophysiology II	5-10
MAT 253 Analytic Geometry and Calculus	5
STA 200 Elementary Statistics or STA 221 Introduction to Statistics and Programming I	5
Major Course Options (Choose from the following):	25
FDN 301, 306; *FDN(FS) 426; FDN 450, 451, 453, 458, 557	
Electives	15-20

Housing, Home Management and Consumer Economics (HMC)

The undergraduate program in the Department of Housing, Home Management and Consumer Economics is diversified with majors in (I) Consumer Economics and Home Management and (II) Housing. Both majors may be combined with Home Economics Education

to fulfill the requirements for teaching in both vocational and non-vocational home economics departments of Georgia high schools. Graduate study is available in both major areas.

Consumer Economics and Home Management

Preparation to deal with the management of resources in our ever changing economy. Career opportunities exist in government, education, and business — in middle management, public administration, consumer groups, family advocacy agencies, with public utilities, and cooperative extension service. Additional career opportunities may involve responsibilities in consumer affairs, marketing, and media information. The major allows the student to design a course of study best suited to his/her particular career goals and interests.

REQUIRED COURSES	HOURS
HMC 343 Selection, Use and Care of Household Equipment	5
HMC 364 Principles of Family Economics	5
HMC 368 Individual and Home Management	5
HMC 369 Home Management Residence Laboratory	5
HMC (Housing, Home Management and Consumer Economics) Options:	15
HMC 365 Family Well-Being and Economic Conditions	
HMC 500 Consumer Legislation	
HMC 564 Family Financial Counseling	
HMC 568 Management for Disadvantaged Families	
HMC 570 Consumer and the Market	
HMC 576 Advanced Family Finance Supporting Options:	15
FDN 350 Meal Planning and Serving	
HMC 386 Introduction to Housing	
HMC 464 Family Social and Economic Systems	
HMC 480 Housing Developments	
HMC 547 Residential Lighting	
HMC 571 Housing Alternatives	
HMC 591 Housing, Home Management and Consumer Economics Internship (5 hours only)	
Any HMC courses not selected in options above	
Related Concentration:	35
(Selected from no more than two areas)	
A. Any area of Home Economics	
B. Economics and/or Agricultural Economics	
C. Gerontology	
D. Home Economics Education	

*This prefix required for certification purposes.

REQUIRED COURSES	HOURS	CHM 261L Elementary Organic Chemistry Laboratory	1
<i>Clothing, Textiles, Interiors and Furnishings</i>		ECN 105 Principles of Macroeconomics	5
CTI 222 Principles of Creative Clothing	5	PSY 101 Elementary Psychology	5
CTI 321 Advanced Clothing Selection and Construction	5	Electives	5
<i>Child and Family Development</i>		Home Economics Education	
*CFD (PSY) 395 Introduction to Child Development	5	Extension	
CFD 495 Contemporary Family Life or		REQUIRED COURSES	HOURS
CFD 497 Marriage, Family and Human Sexuality	5	*CFD (PSY) 395 Introduction to Child Development	5
<i>Foods and Nutrition</i>		CFD 495 Contemporary Family Life or	
FDN 306 Foods	5	497 Marriage, Family and Human Sexuality	5
FDN 350 Meal Planning and Serving	5	CTI 222 Principles of Creative Clothing	5
FDN 351 Foundations of Nutrition	5	CTI 321 Advanced Clothing Selection and Construction	5
<i>Housing, Home Management and Consumer Economics</i>		FDN 306 Foods	5
HMC 343 Selection, Use, and Care of Household Equipment	5	FDN 350 Meal Planning and Serving	5
HMC 364 Principles of Family Economics	5	FDN 351 Foundations of Nutrition	5
HMC 368 Individual and Home Management	5	HMC 343 Selection, Use and Care of Household Equipment	5
HMC 369 Home Management Residence Laboratory	5	HMC 364 Principles of Family Economics	5
Concentration:		HMC 368 Individual and Home Management	5
Selected from one area of Home Economics	10	HMC 369 Home Management Residence Laboratory	5
<i>Education</i>		AET 313 Agricultural Extension Organization and Procedures	5
EPY 304 Learning and Motivation or		AET 314 Agricultural Extension Service Program	5
305 Adolescent Psychology	5	AET 391 Internship in Cooperative Extension	5
EHE 335 Basic Curriculum Planning in Home Economics Education	5	JRL 385 Public Relations	5
EHE 336 Teaching Procedures in Home Economics Education	5	EPY 304 Learning and Motivation or	
EHE 345AB September School Practicum in Home Economics Education	2	305 Adolescent Psychology	5
*EAV(ESS)401 Basic Instructional Media Competencies	3	EHE 335 Basic Curriculum Planning in Home Economics Education	5
EVO 555 Teaching Vocational Education to Students With Special Education Needs	5	EHE 336 Teaching Procedures in Home Economics Education	5
EHE 546 Student Teaching in Home Economics Education	15	EHE 345AB September School Practicum in Home Economics Education	2
SPC 108 Fundamentals of Speech Communication	5	EVO 555 Teaching Vocational Education to Students with Special Education Needs	5
CHM 111 Elementary Chemistry	4	EHE 546 Student Teaching in Home Economics Education	15
CHM 111L Elementary Chemistry Laboratory	1	*EAV (ESS) 401 Basic Instructional Media Competencies	3
CHM 261 Elementary Organic Chemistry	4	Additional Requirements:	
		SPC 108 Fundamentals of Speech Communication	5
		CHM 111 Elementary Chemistry	4
		CHM 111L Elementary Chemistry Laboratory	1
		CHM 261 Elementary Organic Chemistry	4

*This prefix required for certification purposes.

CHM 261L Elementary Organic Chemistry Laboratory	1
ECN 105 Principles of Macroeconomics	5
PSY 101 Elementary Psychology	5
SOC 431 Rural Social Systems	
or	
435 The Community	5

Home Economics and Journalism

The major in home economics and journalism is offered jointly by the College of Home Economics and the School of Journalism. It is designed to prepare students for journalistic work related to home economics with advertising, public relations, newspapers, magazines and radio-television.

REQUIRED COURSES	HOURS
SPC 108 Fundamentals of Speech Communication	
or	
SPC 210 Voice and Diction	5
CHM 111 Elementary Chemistry	4
CHM 111L Elementary Chemistry Laboratory	1
ECN 105 Principles of Macroeconomics	5
PSY 101 Elementary Psychology	5
ART 120 Art Structure	
or	
ART 230 Art Structure	
or	
ART 300 Appreciation of the Visual Arts	5
CTI 222 Principles of Creative Clothing	5
*CFD (PSY) 395 Introduction to Child Development	5
CTI 375 Residential Interiors and Furnishings	5
FDN 350 Meal Planning and Serving	5
HMC 343 Selection, Use and Care of Household Equipment	5
HMC 364 Principles of Family Economics	5
HMC 368 Individual and Home Management	5
HMC 369 Home Management Residence Laboratory	
or	
HMC 547 Residential Lighting	5
JRL 101 Mass Communications I: Survey	5
JRL 260 News Writing and Reporting	5
JRL 504 Law of Communication	5
Select 25 hours from one of the following sequences:	25

- Advertising:
 - JRL 310, 311, 312 and 2 of the following related journalism courses approved by advisor: JRL 352, 385, 571, 574, 578, 579, 584, 598

- Magazines:
 - JRL 351, 558 and 3 of the following related journalism courses approved by advisor: JRL 280, 352, 559, 570, 590
 - Newspapers:
 - JRL 351, 530 and 3 of the following related journalism courses approved by advisor: JRL 280, 532, 558, 559
 - Public Relations:
 - JRL 352, 385 and 3 of the following related journalism courses approved by advisor: JRL 280, 310, 590, 592, 595
 - Radio-Television:
 - JRL 301, 383, 384 and 2 of the following related journalism courses approved by advisor: JRL 302, 514, 515, 584
- Select 5 hours from any sequence listed above 5
- Select 10 hours from: CFD, CTI, FDN, HMC 10
- Electives 10

Combined Major Programs

Four combined major programs are offered in which students attain the requirements for a double major as well as meet the course requirements for certification for the public school system. Thus, an individual attains a degree which permits more diverse employment and career opportunities.

Clothing and Textiles/Home Economics Education

This combined major prepares students for certification for teaching in the public school system in addition to courses related to the clothing field.

REQUIRED COURSES	HOURS
CTI 200 Seminar in Clothing, Textiles, Interiors and Furnishings	1
CTI 222 Principles of Creative Clothing	5
CTI 320 Textiles	4
CTI 320L Textiles Laboratory	1
CTI 321 Advanced Clothing Selection and Construction	5
CTI 325 Textile Testing	5
CTI 375 Residential Interiors and Furnishings	5
CTI 420 Advanced Textiles	5
CTI 464 History of Costume: Antiquity to 19th Century	
or	
CTI 465 History of Costume from 19th Century to Present	5
CTI 561 Clothing and Textile Economics	5
CTI 565 Techniques in Construction on Current Fabrics	5

*This prefix required for certification purposes.

CTI (Clothing and Textiles) options	20
*CFD(PSY) 395 Introduction to Child Development	5
CFD 495 Contemporary Family Life	
or	
497 Marriage, Family and Human Sexuality	5
FDN 350 Meal Planning and Serving	5
FDN 306 Foods	5
FDN 351 Foundations of Nutrition	5
HMC 343 Selection, Use and Care of Household Equipment	5
HMC 364 Principles of Family Economics	5
HMC 368 Individual and Home Management	5
HMC 369 Home Management Residence Laboratory	5
EHE 345AB September School Practicum in Home Economics Education	2
EHE 335 Basic Curriculum Planning in Home Economics Education	5
EHE 336 Teaching Procedures in Home Economics Education	5
*EAV (ESS) 401 Basic Instructional Media Competencies	3
EHE 546 Student Teaching in Home Economics Education	15
EVO 555 Teaching Vocational Education to Students With Special Education Needs	5
EPY 304 Learning and Motivation	
or	
305 Adolescent Psychology	5
SPC 108 Fundamentals of Speech Communication	5
or	
SPC 267 Introductory Interviewing	
ART 120 or 230 Art Structure	
or	
ART 287 Introduction to the History of Ancient and Medieval Art	
or	
ART 288 Introduction to the History of Art, Renaissance—18th Century	
or	
ART 289 Introduction to 19th and 20th Century Art	5
CHM 121 General Chemistry	4
CHM 121L General Chemistry Laboratory	1
CHM 261 Elementary Organic Chemistry	4
CHM 261L Elementary Organic Chemistry Laboratory	1
ECN 106 Principles of Microeconomics	5
PSY 101 Elementary Psychology	5
SOC 105 Introductory Sociology	5
MKT 360 Principles of Marketing	5

Consumer Economics and Home Management/Home Economics Education

The combined major in Consumer Economics and Home Management/Home Economics Education prepares students for careers in teaching family and consumer economics and management in high schools and in continuing education programs. It also prepares consumer affairs professionals for community agencies and commercial enterprises.

REQUIRED COURSES HOURS

HMC 343 Selection, Use and Care of Household Equipment	5
HMC 364 Principles of Family Economics	5
HMC 368 Individual and Home Management	5
HMC 369 Home Management Residence Laboratory	5
*CFD (PSY) 395 Introduction to Child Development	5
CFD 495 Contemporary Family Life	
or	
CFD 497 Marriage, Family and Human Sexuality	5
CTI 222 Principles of Creative Clothing	5
CTI 321 Advanced Clothing Selection and Construction	5
FDN 306 Foods	5
FDN 350 Meal Planning and Serving	5
FDN 351 Foundations of Nutrition	5
*EAV (ESS) 401 Basic Instructional Media Competencies	3
EPY 304 Learning and Motivation	
or	
EPY 305 Adolescent Psychology	5
EHE 335 Basic Curriculum Planning in Home Economics Education	5
EHE 336 Teaching Procedures in Home Economics Education	5
EHE 345AB September School Practicum in Home Economics Education	2
EHE 546 Student Teaching in Home Economics Education	15
EVO 555 Teaching Vocational Education to Students with Special Education Needs	5
Concentration:	15
(Choose from the following)	
HMC 365 Family Well-Being and Economic Conditions	
HMC 500 Consumer Legislation	
HMC 564 Family Financial Counseling	
HMC 568 Management for Disadvantaged Families	
HMC 570 Consumer and the Market	
HMC 576 Advanced Family Finance	

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Options:	15	CTI 572 Furnishings, Manufacturing and Retailing Industries	5
(Choose from the following)		CTI (Interiors and Furnishings) options	15
HMC 386 Introduction to Housing		ART 120 or 230 Art Structure	5
HMC 464 Family Social and Economic Systems		CHM 121 General Chemistry	4
HMC 480 Housing Developments		CHM 121L General Chemistry Laboratory	1
HMC 547 Residential Lighting		CHM 261 Elementary Organic Chemistry	4
HMC 571 Housing Alternatives		CHM 261L Elementary Organic Chemistry Laboratory	1
HMC 591 Housing, Home Management and Consumer Economics Internship (5 hours only)		MAT 103 Fundamentals of Mathematics for Business	5
Any HMC course not selected in Concentration		STA 200 Elementary Statistics	5
SPC (MAN) 256 Discussion Methods		ECN 105 Principles of Macroeconomics	
or		or	
SPC 108 Fundamentals of Speech Communication		ECN 106 Principles of Microeconomics	5
or		PSY 101 Elementary Psychology	
SPC 250 Public Speaking	5	or	
CHM 111 Elementary Chemistry	4	SOC 105 Introductory Sociology	5
CHM 111L Elementary Chemistry Laboratory	1	ACC 110 Principles of Accounting I	
CHM 261 Elementary Organic Chemistry	4	or	
CHM 261L Elementary Organic Chemistry Laboratory	1	ACC 116 Survey of Accounting	5
ECN 105 Principles of Macroeconomics		MAT 207 Mathematical Analysis for Business I	5
or		MKT 360 Principles of Marketing	5
ECN 106 Principles of Microeconomics	5	MKT Senior Division	5
PSY 101 Elementary Psychology	5	CTI 222 Principles of Creative Clothing	5
SOC 105 Introductory Sociology	5	CTI 321 Advanced Clothing Selection and Construction	5
		*CFD (PSY) 395 Introduction to Child Development	5
		CFD 495 Contemporary Family Life	
		or	
		CFD 497 Marriage, Family and Human Sexuality	5
		FDN 306 Foods	5
		FDN 350 Meal Planning and Serving	5
		FDN 351 Foundations of Nutrition	5
		HMC 343 Selection, Use and Care of Household Equipment	5
		HMC 364 Principles of Family Economics	5
		HMC 368 Individual and Home Management	5
		HMC 369 Home Management Residence Laboratory	5
		EPY 304 Learning and Motivation	
		or	
		EPY 305 Adolescent Psychology	5
		EHE 335 Basic Curriculum Planning in Home Economics Education	5
		EHE 336 Teaching Procedures in Home Economics Education	5
		EHE 345AB September School Practicum in Home Economics Education	2
		EHE 546 Student Teaching in Home Economics Education	15
		*EAV (ESS) 401 Basic Instructional Media Competencies	3

*This prefix required for certification purposes.

EVO 555 Teaching Vocational Education to Students with Special Education Needs	5	CFD 495 Contemporary Family Life or	
		CFD 497 Marriage, Family, and Human Sexuality	5
Housing/Home Economics Education		FDN 306 Foods	5
This combined major fulfills the requirements for teaching in both vocational and non-vocational home-making departments of the public school system. The graduate in this program is qualified to receive a four-year teacher's certificate.		FDN 350 Meal Planning and Serving	5
The housing major provides training for careers in home services, management of multi-unit or public housing projects and assistance to architects, designers, household appliance companies and utilities.		FDN 351 Foundations of Nutrition	5
		SPC 108 Fundamentals of Speech Communication or	
REQUIRED COURSES	HOURS	SPC 210 Voice and Diction	5
HMC 343 Selection, Use and Care of Household Equipment	5	CHM 111 Elementary Chemistry	4
HMC 364 Principles of Family Economics	5	CHM 111L Elementary Chemistry Laboratory	1
HMC 368 Individual and Home Management	5	CHM 261 Elementary Organic Chemistry	4
HMC 369 Home Management Residence Laboratory	5	CHM 261L Elementary Organic Chemistry Laboratory	1
HMC 386 Introduction to Housing	5	STA 200 Elementary Statistics or	
HMC 480 Housing Developments	5	STA 221 Introduction to Statistics and Programming I	
HMC 487 Housing Design Principles	5	or	
HMC 547 Residential Lighting	5	STA 421 Statistical Methods I	5
HMC 571 Housing Alternatives	5	ECN 105 Principles of Macroeconomics or	
CTI 375 Residential Interiors and Furnishings	5	ECN 106 Principles of Microeconomics	5
ART 120 Art Structure or		PSY 101 Elementary Psychology	5
ART 300 Appreciation of the Visual Arts	5	SOC 105 Introductory Sociology	5
*EAV (ESS) 401 Basic Instructional Media Competencies	3	SOC 431 Rural Social Systems or	
EPY 304 Learning and Motivation or		SOC 432 The Sociology of Urban Life or	
EPY 305 Adolescent Psychology	5	SOC 435 The Community	5
EVO 555 Teaching Vocational Education to Students with Special Education Needs	5		
EHE 345AB September School Practicum in Home Economics Education	2		
EHE 335 Basic Curriculum Planning in Home Economics Education	5		
EHE 336 Teaching Procedures in Home Economics Education	5		
EHE 546 Student Teaching in Home Economics Education	15		
CTI 222 Principles of Creative Clothing	5		
CTI 321 Advanced Clothing Selection and Construction	5		
*CFD (PSY) 395 Introduction to Child Development	5		

* This prefix required for certification purposes.

COURSES OF INSTRUCTION

CHILD AND FAMILY DEVELOPMENT (CFD)

210. Development Within the Family. 5 hours. Individual and family development during the life cycle is considered with special emphasis upon interpersonal relationships among family members.

301. Special Problems in Child and Family Development. 1-20 hours.

Prerequisite: 20 hours of senior division CFD coursework.

A course designed for the senior major to permit independent study and research.

390. Prenatal and Infant Development. 5 hours.

A study of the adjustment of the young family through pregnancy and childbirth. Special emphasis is given to the physical, mental, emotional and social development of the child up to two years of age.

393. Family Relations. 5 hours.

Personal development and family living, planning for marriage, achieving a happy marriage.

395. (PSY) Introduction to Child Development. 5 hours.

Prerequisite: PSY 101.

A survey of the physical, cognitive and personality development of children with emphasis upon the years two to ten.

407. A Survey of Marriage and Family Problems. 5 hours.

Prerequisite: SOC 105 or PSY 101 and permission of department.

Study of stresses that produce problems in the modern family; e.g., marital and sexual adjustment, divorce, alcoholism, illegitimacy, etc.

408. (PSY) Development of the Young Child. 5 hours.

Prerequisite: CFD (PSY) 395 or equivalent.

The physical, mental, emotional and social development of the preschool child and the origins of psychological processes in lab work; special reference to techniques of guidance.

409. Infant Development. 5 hours.

Prerequisite: CFD (PSY) 408 or permission of department.

Emotional, social, intellectual and physical development in infancy. Supervised observation in Infant Center and in selected homes.

454. (JUR) Behavioral Science and Domestic Relations Law. 3 hours.

Prerequisite: Permission of department.

This advanced domestic relations seminar, team taught by a law professor and a child and family development professor, will examine the role of the behavioral sciences (e.g., child development and family studies) in the determination of domestic relations disputes. Both legal and behavioral science material will be used.

461. (SOC) The Family. 5 hours.

Family study utilizing data from the fields of anthropology, individual and social psychology, history, sociology, economics and psychiatry.

462. Women in the Family and Society. 5 hours.

Prerequisite: Upper division standing, 5 hours of Child and Family Development and Sociology or permission of department.

Women's roles in the family and society—the range of occupational, volunteer and other societal roles open to women; changing societal constraints on women's roles; conflicting demands on societal and family roles; strategies for handling conflicts; effects of changes in women's roles on men's roles.

470. The Family and Adolescence. 5 hours.

Prerequisite: 10 hours from the following: CFD 210 or CFD (PSY) 395 or SOC 105 or PSY 101. Upper division status.

A consideration of the unique features of the family while it is at the life cycle stage which includes an adolescent member. Special attention will be given to the process of development within the family beginning with early adolescence and continuing into adulthood. The focus on family/adolescent interaction will be understood within the context of the larger socio-cultural system.

491. Hospitalized Child and the Family. 5 hours.

Prerequisite: CFD 390 and CFD (PSY) 395 and one of the following: CFD 495 or CFD (SOC) 461 or CFD 407.

Study of the normal and stress related needs of hospitalized children and their families and meeting of these through the Child Life Program. The hospital milieu of the child. Philosophy and development of the Child Life Program.

492. Individual and Family Development Facilitation. 5 hours.

Prerequisite: CFD 496 or equivalent.

Developing skills for observing social interaction and selected techniques for facilitating optimal development of individuals and families in social contexts.

494. Research Methods in Child and Family Development. 5 hours.

Prerequisite: Ten quarter hours of coursework in Child and Family Development.

Introduction to research design in child and family development. Emphasis on the evaluation of research in the field and on common problems incurred in applied research which affect the interpretation of data.

495. Contemporary Family Life. 5 hours.

Prerequisite: Work in child development or family relations, SOC 105 or CFD (SOC) 461.

A study of the changing American family and

of the interpersonal relationships of family members at each stage in the family life cycle.

496. Guidance of Children and Parents. 5 hours.

Prerequisite: CFD (PSY) 395 or equivalent. Principles, techniques and application for teaching parents and teachers in the guidance of growth and development of children and youth. Opportunities for observation and participation in child-child, child-parent, child-teacher and teacher-parent interaction.

496H, 497H, 498H. Independent Reading. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

497. Marriage, Family, and Human Sexuality. 5 hours.

Prerequisite: Permission of department. A survey of various attitudes, values, substantive and theoretical materials on human sexuality, particularly the relation of these two and implications for interpersonal relations in marriage and the family.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

500. Infant/Preschool Program Observation Methods and Skills. 1-10 hours.

Prerequisite: CFD (PSY) 395 or permission of department.

Directed experiences in observing and recording development and behavior of children under six leading to competencies in obtaining data basic to infant/preschool program development and guidance of children.

590. Preschool Teaching-Learning Strategy. 5 hours. Three class periods, three lab periods, one lab discussion period.

Prerequisite: CFD (PSY) 395.

Philosophy and theory of preschool teaching/learning strategy. Curriculum and program development for the preschool. Guidance of the young child's development through preschool programming. Practicum in preschool settings.

591. Creative Activities in Nursery School and Kindergarten. 5 hours.

Prerequisite: CFD (PSY) 395 and one additional related senior division course.

Selected types of creative activities for children of the preschool years, including literature, art, mathematics, science, music, nature study and other materials for young children. Practical

experience with these in child development laboratories.

592. Theory and Practice of Group Programs for Children Under Six. 15 hours.

Prerequisite: CFD 390 or 409 and CFD (PSY) 395 or permission of department.

Developmental and educational theories applied to design and content of curriculum activities for children under six. Facilitation and understanding of children's development through curriculum experiences and materials. Theories of group guidance of children. Laboratory practicum with groups of children (infants through five years of age) including planning and implementing of curriculum activities.

594. Nursery School and Kindergarten Theories and Administration. 5 hours.

Prerequisite: CFD (PSY) 395 and one additional related senior division course.

Instruction and observation in the basic principles of group management of children from two through five years; guidance in selection of equipment and play materials; administration and organization of nursery schools and kindergartens; visitation of pre-primary centers.

598ABCDE. Practicum in Child and Family Development. 5-20 hours each suffix with 20 hours a maximum in any combination.

A. Group programs for children under six. Prerequisite: CFD (PSY) 395 and CFD 500 and 592 and permission of department.

B. Human development programs. Prerequisite: CFD (PSY) 395 and CFD 496 and permission of department.

C. Programs for mentally retarded children and their families. Prerequisite: CFD (PSY) 395 and EXC 500 and permission of department.

D. Administration. Prerequisite: CFD (PSY) 395 and CFD 592 and 594 and permission of department.

E. Hospital child life program. Prerequisite: CFD (PSY) 395 and CFD 491 and 496 and permission of department.

Supervised professional practice in settings which employ persons with undergraduate degrees in Child and Family Development. Placements can be in above A, B, C, D, or E.

CLOTHING, TEXTILES, INTERIORS AND FURNISHINGS (CTI)

200. Seminar in Clothing, Textiles, Interiors and Furnishings. 1 hour.

An introductory seminar to familiarize students majoring in one of the areas of specialization in the department with the programs

of study, course offerings, career opportunities and leaders in related businesses and industries. Open to all students. Must be taken by CTI majors no later than one quarter after admission to CTI program.

210. Textiles for Consumers. 5 hours.

Introduction to textile study with emphasis on selection, use, performance and care of textile products in the consumer's environment.

222. Principles of Creative Clothing. 5 hours.

Prerequisite: CTI 210.

Application of art principles to clothing selection. Basic principles of clothing construction related to fabric, fit and design of the garment.

301. Special Problems in Clothing, Textiles, Interiors and Furnishings. 1-20 hours.

Prerequisite: 20 hours of senior division CTI coursework.

Designed for the senior major to permit independent study and research.

320. Textiles. 4 hours.

Prerequisite: CTI 210 and CHM 122 and 122L.

Corequisite: CTI 320L.

Study of fibers, yarns, fabrics and finishes.

320L. Textiles Laboratory. 1 hour.

Prerequisite: CTI 210 and CHM 122 and 122L.

Corequisite: CTI 320.

Introduction to basic textile testing for end-use performance.

321. Advanced Clothing Selection and Construction. 5 hours.

Prerequisite: CTI 210 and 222 and 320.

Advanced dressmaking techniques in handling various types of textile fabrics; clothing selection based on aesthetic, physical and psychological factors.

323. Clothing for the Family. 5 hours.

Prerequisite: CTI 210 or permission of department.

Physiological, psychological, artistic, social and economic aspects of clothing as related to clothing needs. Individual reports, field trips.

325. Textile Testing. 5 hours.

Prerequisite: CTI 320 and 320L and STA 200.

Standard testing procedures and equipment used in determining the end-use performance of textiles. Analysis of fibers, yarns and fabrics.

334. Introduction to Merchandising of Apparel, Textiles, and Furnishings. 5 hours.

Prerequisite: CTI 210 and ACC 110 or 116 and MKT 360 and MAT 207 and permission of department.

Corequisite: MAT 207.

Merchandising, organization of merchandising

market resources, apparel, textile and furnishings trade practices and merchandise budgeting control.

363. Costume Design. 5 hours.

Prerequisite: CTI 321 or 565 and ART 120 or 230 or 300.

Study of apparel design in relation to elements and principles involved. Influence of the fashion industry and socio-cultural factors. Application to the consumer, the seamstress and the creator of clothing design.

375. Residential Interiors and Furnishings. 5 hours.

Prerequisite: CTI 210 or permission of department.

A basic course in furnishing the home for contemporary living. Students have opportunity to apply design principles in planning furnishings for home.

376. Residential Design. 5 hours.

Prerequisite: CTI 375 and permission of department.

An introduction in design communication by two-dimensional drawings of layouts, elevations and sections in traditional and contemporary residences; and specifications for estimating interior finishing materials.

377. Practical Home Furnishings. 5 hours.

Prerequisite: CTI 375 or permission of department.

A course dealing with the refinishing of furniture and construction of furnishings for the home; a study of woods and wood finishes used for furniture; upholstery techniques, making curtains, draperies and slipcovers.

378. Interior Perspective and Media. 5 hours.

Prerequisite: CTI 375.

The development of methods for design communication through manipulation of two- and three-dimensional drawings in many media.

397. Creative Materials and Activities in the Home. 5 hours.

Functions of creative materials and activities in the home in developing a closer family unity; types of creative activities which can be carried on in the average home.

415. Preservation and Conservation of Historic Costumes and Textiles. 5 hours.

Prerequisite: CTI 320.

Theory and application of preservation and conservation techniques for historic costumes and textiles.

420. Advanced Textiles. 5 hours.

Prerequisite: CTI 320 and 320L.

In-depth study of fibers and finishes; emphasis

on man-made fibers, new fiber and finish developments and technology.

430. Clothing and Human Behavior. 5 hours.
Prerequisite: CTI 320 and 320L and PSY 101 or permission of department.

A multidisciplinary approach to the study of clothing with particular emphasis on psychological, sociological and economic aspects of clothing.

434. Fashion Image Development and Promotion. 5 hours.
Prerequisite: CTI 334.

A study of practices and the application of techniques of image development in the merchandising of fashion goods. The development of displays and promotions appropriate to various store images.

445. Textile Dyeing. 5 hours. Three lectures and two lab periods.
Prerequisite: CTI 325 and 420 or permission of department.

An in-depth study of textile dyeing processes with emphasis on fiber-dye association. Analysis of dyeing techniques and properties of dyes and dyed materials.

464. History of Costume: Antiquity to 19th Century. 5 hours.
Prerequisite: CTI 222 and 320 and 320L or permission of department.

Interrelationship of costume and social, cultural, political and economic environments from antiquity to the 19th Century.

465. History of Costume from the 19th Century to Present. 5 hours.
Prerequisite: CTI 320 and 320L and 321 or 565 or permission of department.

Interrelationship of costume and social, cultural, political and economic environments from 19th Century to present day.

471. United States Study Tour in Clothing and Textiles. 5 hours.
Prerequisite: Senior division and permission of department.

An on-location study of clothing, textiles and fashion merchandising in the United States. Experiences will include lectures by recognized leaders in the field, meetings with designers, manufacturers, merchants and field trips to textile mills, apparel producers, designers' showrooms, distribution centers, retail stores and museums.

473A. United States Study Tour in Furnishings and Interiors. 5 hours each.
Prerequisite: CTI 475 and 477 or equivalent or permission of department.

A systematic study of residential interiors and

furnishings as found in original, restored and reconstructed areas of the United States. Museums which feature decorative accessories and furniture, design studios, showrooms and/or manufacturing plants will be visited. (A maximum of 10 quarter hours credit earned in tour experiences may be applied to any one degree.)

475. Historical Homes and Furnishings. 5 hours.
Prerequisite: CTI 375 or permission of department.

A study of decoration in the past with application to contemporary interiors.

476. Decorative Accessories for the Home. 5 hours.
Prerequisite: CTI 475 or permission of department.

Historical and cultural development of accessories used in the home including ceramics, metals and textiles. Design and characteristics of materials in these accessories will be covered.

477. Contemporary Home Furnishings. 5 hours.
Prerequisite: CTI 375 or permission of department.

Contemporary developments in furniture and accessories for the home; designs and materials used in contemporary homes.

478. Fabrics for Furnishings and Interiors. 5 hours.
Prerequisite: CTI 320 and 320L and 475 or 477 or permission of department.

Development of design, construction, fibers and finishes for fabrics with emphasis on quality and utilization of current materials for upholstery, soft floor coverings, window treatments, bed, bath and table linens.

479. Home Furnishings Product Analysis. 5 hours.
Prerequisite: CTI 320 and 320L.

The study of home furnishings products in relation to quality analysis and cost/value determination, as affected by performance standards, end-use expectations, consumer needs, governmental regulations and industrial production methods.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.
This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

520. Physical Analysis of Textiles. 5 hours.

Prerequisite: CTI 325 and PCS 128-128L or 138-138L.

Theory, application and analysis of serviceability, wear, abrasion, strength, shrinkage and other physical components to fabric testing.

525. Chemical and Optical Analysis of Textiles. 5 hours.

Prerequisite: CTI 325 and 420 and CHM 241 and 241L.

Theory and application of organic chemistry and optical analysis to fabrics, dyes and finishes.

534. Fashion Product Analysis. 5 hours.

Prerequisite: CTI 321 or 565 and 325 and permission of department.

A study of the processes of product analysis and cost/value determination; the interrelation of industry methods and limitations, governmental regulations, textile testing and performance standards, end-use requirements and consumer needs.

535. Textile Finishing Processes. 5 hours.

Prerequisite: CTI 325 and 420.

Theory, application, evaluation and identification of textile finishes and textile auxiliary processes. Examination of the role of finishing and types of finishes used in manufacturing fibers, yarns and fabrics.

561. Clothing and Textile Economics. 5 hours.

Prerequisite: CTI 320 and 320L and 321 or 565 and ECN 105 or 106 or permission of department.

Organization and functions of clothing and textile industries. Factors related to production, distribution and consumption of apparel and household textiles; special problems; field trips.

562. Tailoring. 5 hours.

Prerequisite: CTI 321 or 565.

Planning and making a tailored ensemble; techniques employed in custom-made garments.

563. Illustrative Materials in Clothing and Textiles. 5 hours.

Prerequisite: CTI 320 and 320L and 321 or 565. Preparation of illustrative materials on problems related to selection, construction and care of clothing and textiles. Designed for teachers, county extension agents and other specialized groups.

564. Pattern Design and Draping. 5 hours.

Prerequisite: CTI 321 or 565.

Making and using a master pattern in designing and constructing garments; emphasis on artistic effects in color, line and texture.

565. Techniques in Construction on Current Fabrics. 5 hours.

Prerequisite: CTI 222 and 320 and 320L.

Planning, constructing and evaluating garments and techniques using knits and specialty fabrics, such as suede, furs, and vinyls. Designed for majors in Clothing and Textiles, Home Economics Education, and Extension Home Economists.

570. Behavioral Design Analysis. 5 hours.

Prerequisite: CTI 378 and 478.

An in-depth study into the physical, psychological and socio-cultural needs of the individual and the family unit as related to satisfaction with interior design components.

571. Furnishings and Interiors for Various Income Levels. 5 hours.

Prerequisite: CTI 378 and 475 and 477 or permission of department.

Planning furnishings for various levels of family income with emphasis on low income families. Study of available space in floor plans and the selection of materials, construction, design, durability and cost of furnishings for the available space, using limited economic resources. Designed for majors in Furnishings and Interiors, Interior Design, Housing, or Home Economics Education.

572. Furnishings Manufacturing and Retailing Industries. 5 hours.

Prerequisite: Senior division and permission of department.

The design, construction and cost of current furnishings related to manufacturing and retailing processes. Field trips to representative manufacturing plants, retail stores, the Atlanta Merchandise Mart and plants in High Point, North Carolina.

575. Methods and Techniques of Furnishings and Interior Display. 5 hours.

Prerequisite: CTI 475 and 476 and 477 or permission of department.

Planning, executing and evaluating illustrative materials and techniques in furnishings for promotional or informational purposes. Individual and group work on two- and three-dimensional displays. Designed for majors in Furnishings and Interiors, Housing, Home Economics Education and Business Home Economics.

591. Textiles, Clothing, Interiors and Furnishings Internship. 5-15 hours.

Prerequisite: Major in CTI department, upper division level and permission of department. Supervised work experience in textiles, clothing, interiors and furnishings in a business firm off campus.

FOODS AND NUTRITION (FDN)

210. Human Nutrition and Food. 5 hours.

Relationship of nutritional needs and food choices to the optimal health of the individual during his/her life cycle.

301. Special Problems in Foods and Nutrition. 1-20 hours.

Prerequisite: 20 hours of senior division FDN coursework.

Designed for the senior major to permit independent study and research.

306. Foods. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: FDN 210 and CHM 261 and 261L. The application of physical and chemical properties of foods to the preparation and storage of food products.

350. Meal Planning and Serving. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: FDN 210.

Basic principles of food preparation in relation to meal management and meal service.

351. Foundations of Nutrition. 5 hours.

Prerequisite: BIO 101-101L or FDN 210; and CHM 261 and 261L.

Basic principles of human nutrition with emphasis on biochemical function and role of nutrients on health status; sources of nutrients; and factors affecting nutrient requirements of individuals.

426. (FS) Sensory Principles and Practices. 5 hours.

See FS 426.

427. Cultural Aspects of Foods and Nutrition. 5 hours.

A study of the foodways, food habits and food behavior of various population groups in this country and others and the influences of these factors on the nutritional status of group members.

441. Advanced Nutrition I. 5 hours.

Prerequisite: FDN 351 and VPH 310 and BCH (BIO) 310.

Survey of the literature of human nutrition (including physiology, biochemistry and endocrinology) related to the major nutrients, with special emphasis on the relationship between diet and performance under varying conditions of age and health.

442. Advanced Nutrition II. 5 hours.

Prerequisite: FDN 441.

Survey of the literature of human nutrition (including physiology, biochemistry and endocrinology) related to the vitamins and inorganic nutrients, with special emphasis on the rela-

tionship between diet and performance under varying conditions of age and health.

450. Food Theory and Application. 5 hours.

Two lectures and two 3-hour lab periods.

Prerequisite: CHM 261 and 261L or equivalent. Study of physical and chemical properties and changes in foods that influence quality of foods and food products. Experimental methods used in preparation of confections, gels, fruits and vegetables, baked products and meats.

451. Safety and Efficacy of Food Additives. 5 hours. Two 2-hour lectures and one 1-hour discussion.

Prerequisite: FDN 306 or 350 and 351.

A study of food products currently used for human consumption in the home and in quantity food service; criteria for evaluating new food items and the effects of new processes on edible quality and nutritive value.

453. Nutrition in Disease. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: FDN 441.

Modification needed in normal diet in treatment of various diseases. Special emphasis is given to the study of digestive diseases, metabolic disorders, diseases of the blood and to cardiovascular and renal disorders.

454. Experimental Foods. 5 hours.

Prerequisite: CHM 261 and 261L or equivalent. Introduction to experimental design, library research and objective and subjective methods for evaluating food quality. Influence of physical and chemical characteristics of meats, batter, doughs and fats on the quality of prepared products.

455. Maternal and Child Nutrition. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: BCH (BIO) 310 and ZOO 213-213L or VPH 310, and FDN 351.

Fundamental principles of nutrition during pregnancy, lactation, infancy and early childhood. Laboratory work in maternity clinics, infant laboratory, nursery schools and other appropriate community agencies.

458. Readings in Nutrition. 5 hours.

Prerequisite: FDN 442 or permission of department.

Recent developments and the present status of knowledge on selected topics from the field of nutrition. The course is designed specifically for those who wish to bring their knowledge of nutrition up to date.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in

individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

500. Nutrition Related to the Human Life Cycle. 5 hours.

A survey of nutritional health needs related to specific stages of the human life cycle. Special emphasis will be given to the nutritional needs during pregnancy, infancy and early childhood, and the gerontological-nutritional needs. The subject matter of the course will be presented for non-majors in Foods and Nutrition.

501. Consumer Aspects of Seafood Handling, Preparation and Marketing. 5 hours.

Prerequisite: FDN 210 and 350.

Techniques for the home economist handling, preparing, and marketing seafood.

555. Catering. 5 hours.

Prerequisite: FDN 350.

Types of catering: establishing types of catering businesses, menu planning, food preparation, styles of service, cost accounting and resource management for the service of food to large and small groups of people. Actual catering of a meal is included.

557. Demonstration Techniques. 5 hours.

Prerequisite: FDN 350.

Planning and organizing effective types of communications about food and nutrition to the consumer through various types of media. Use of techniques such as food demonstrations, construction of displays and writing of brochures will be performed by students.

561. Computer Applications in Nutrition. 5 hours.

Prerequisite or Corequisite: FDN 453.

Lecture and laboratory experience using computer procedures of importance in dietetic and community nutrition. Procedures, operating on large computer and/or microcomputers, concern nutrient evaluation of diets, study and description of eating habit patterns, dietary guidance of clinical patients and management of institutional food service.

570. Quantity Food Production. 5 hours.

Prerequisite: FDN 350.

Application of principles of food preparation in large quantities utilizing institutional equipment and procedures; including topics such as: yield studies, work improvement methods, and recipe standardization.

573. Institutional Management I. 5 hours.

Prerequisite: FDN 570.

The study of food service management: tools of management, staffing, and delivery systems as they pertain to the management and organization of public and private food service in institutions, such as hospitals and schools.

574. Purchasing for Institutional Food Service. 5 hours.

Prerequisite: FDN 350.

A study of the total purchasing process with emphasis on purchasing methods, storage and issuing procedures, inventory systems, forecasting of quantities and specification writing. Purchase of food, beverages, chemicals, disposables, table service and small equipment is included.

575. Institutional Management II. 5 hours.

Prerequisite: FDN 570.

A study of the layout, design, equipment selection and purchase necessary to establish a food service facility. Energy use and conservation involved in a food service facility. Overall operational cost involved in operating a food service facility and the maintenance of records and cost controls. Laws and regulations pertaining to the operation of a food service facility.

591. Foods and Nutrition Practicum. 5 hours.

Prerequisite: Basic courses in FDN department, upper division level, and permission of department.

Supervised work experience in dietetics and/or food service facility.

HOUSING, HOME MANAGEMENT AND CONSUMER ECONOMICS (HMC)

210. Shelter and Man. 5 hours.

A study of structures, equipment and environmental surroundings man chooses for his family's shelter and the influence of human needs, values, resources and goals on these decisions.

301. Special Problems in Housing, Home Management and Consumer Economics. 1-20 hours.

Prerequisite: 20 hours of senior division HMC coursework.

Designed for the senior major to permit independent study and research.

343. Selection, Use and Care of Household Equipment. 5 hours.

Prerequisite: FDN 210 and HMC 210 and CTI 210.

A study of household equipment in relation to principles of operation. Basic information about utilities, kitchen and laundry planning and home lighting.

364. Principles of Family Economics. 5 hours.

Prerequisite: ECN 105 or permission of department.

Changes in economic requirements during the family life cycle; forces affecting the economic welfare of families in this country. Focused on consumer credit, savings and investment, insurance, home ownership and estate planning.

365. Family Well-Being and Economic Conditions. 5 hours.

Prerequisite: ECN 105 or permission of department.

Examination of contemporary economic problems that affect the well-being of families in the United States. Examples are affluence and poverty, monetary and fiscal policies as they affect families, efficiency of the delivery of public services in the areas of health, education, subsidized housing, etc.

368. Individual and Home Management. 5 hours.

Prerequisite: HMC 210 and CFD 210 and junior standing or permission of department.

Survey of basic concepts in individual and home management such as human value orientations, individual and group decision making and creation and utilization of resources. Special emphasis will be placed on application of concepts to unique managerial situations encountered in day to day living.

369. Home Management Residence Laboratory. 5 hours.

Prerequisite: HMC 343 and 368.

Informal lab experience for integrating competencies from all areas of home economics with those of personal and home management. Creative problem solving utilizing material and personal resources for attainment of individual and group goals.

386. Introduction to Housing. 5 hours.

Prerequisite: HMC 210.

Present-day family housing needs from the standpoint of health, safety, environment, finance, ownership; types of dwellings; minimum standards.

464. Family Social and Economic Systems. 5 hours.

Prerequisite: ECN 105 or 106 and SOC 105 or one senior division course in related field.

Systems analysis of research on the family as an income producing and income utilizing unit; application of sociological theory and research to economics of the household; implications on family structural characteristics on the family as supplier and demander of inputs and outputs in relation to economic systems, and feedback consequences for families.

465. Family Consumer Systems. 5 hours.

Prerequisite: ECN 105 and SOC 105 or one senior division course in related field.

Social systems analysis of research on consumer activities of households, families and individuals; examination of empirical research and theory on the consumer at micro and macro levels; suggested new directions for consumer research and theory with family focus.

471AB. United States Study Tours in Housing. 5 hours each.

Prerequisite: Senior standing, one senior level housing course or permission of department.

A systematic study of housing types, conditions and developments in selected areas of the United States. Sites which feature varying residential types and housing manufacturing plants will be visited.

472AB. Foreign Study Tour in Housing. 5 hours each.

Prerequisite: Senior standing, one senior level housing course or permission of department.

An on-site study of historical and contemporary housing types, conditions and developments in selected areas outside the United States.

480. Housing Developments. 5 hours.

Prerequisite: HMC 386 and five hours each of sociology and economics or permission of department.

Development of modern housing as related to family welfare; to health, safety, delinquency, social progress. A survey of housing problems; development of legislation; policies and programs; social and economic trends.

487. Housing Design Principles. 5 hours.

Prerequisite: CTI 375 and HMC 386.

A course in the principles of housing design and construction including drafting, residential construction and design, and professional relationships with architects and interior designers.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

500. Consumer Legislation. 5 hours.

Prerequisite: Two upper division courses in related areas.

The rights and responsibilities of consumers related to legislation concerning consumer information, product safety, choice of goods and channels of appeal for the consumer.

546. Household Equipment Testing. 5 hours.

Prerequisite: PCS 127-127L and HMC 343.

The operation, care, and installation requirements of equipment; the measurement and testing of factors governing the efficiency of different types of equipment.

547. Residential Lighting. 5 hours.

Prerequisite: HMC 210 and CTI 210 and HMC 386 or CTI 378.

Residential application of lighting. Lighting principles and procedures and their application to various residential situations. New developments in lighting fixtures and lighting design.

564. Family Financial Counseling. 5 hours.

Prerequisite: HMC 364 or permission of department.

Case study and practicum experiences related to financial counseling for families.

567. Home Management Analysis. 5 hours.

Prerequisite: HMC 368.

Emphasis is on the development of problem-solving skills and management of resources available for family use through the use of case studies, simulations and laboratory experiences.

568. Management for Disadvantaged Families. 5 hours.

Prerequisite: HMC 368.

Study of the life styles and instrumental functioning of families handicapped by limited cultural, mental, economic and physical resources. Unique managerial needs of disadvantaged families will be explored.

570. Consumer and the Market. 5 hours.

Prerequisite: ECN 105.

Problems of the household buyer; intelligent selection of goods on modern market; standards and labeling as safeguards in buying; family income and problems of distribution.

571. Housing Alternatives. 5 hours.

Prerequisite: HMC 480 or equivalent or permission of department.

Analysis of housing types for low-income families. Public and private efforts to meet the housing needs of families with limited resources.

576. Advanced Family Finance. 5 hours.

Prerequisite: HMC 364 or equivalent.

Personal and family financial planning. Family values in relation to family income, spending, saving and investing; advanced analysis of the effect of the economy on family financial planning; retirement plans and social security; insurance; home ownership and housing.

591. Housing, Home Management and Consumer Economics Internship. 5-15 hours.

Prerequisite: Basic courses in HMC, upper division level and permission of department. Supervised work experience in housing, household equipment, home management or consumer economics.

THE HENRY W. GRADY SCHOOL OF JOURNALISM AND MASS COMMUNICATION

ADMINISTRATIVE OFFICER

J. Thomas Russell, A.B.J., M.S., Ph.D., *Dean*

GENERAL INFORMATION

Mission

It is the mission of the Henry W. Grady School of Journalism and Mass Communication* to:

(1) Offer undergraduate instruction regarding the collection, preparation, and presentation of ideas and information for dissemination through the mass media. Specifically, undergraduates will be provided opportunities (a) to prepare for careers within the mass media industries and (b) to understand and appreciate the operation, function, and significance of mass media in contemporary society with emphasis on the role of free and responsible media in a democracy.

(2) Offer instruction at the graduate level, leading to the Master of Arts degree and the Doctor of Philosophy degree. Graduate students will be given opportunities to continue their professional and undergraduate experience in the practice, management, and critical evaluation of the mass media. The graduate program will be oriented to the academic needs of the professional communicator, the policy maker, the communication researcher, and the teacher.

(3) Develop through research and practice a body of knowledge appropriate to the instructional missions and a faculty who will monitor

the performance of the communication field, who will extend the frontiers of knowledge, and who will make this knowledge accessible to students, other scholars, professionals in the media, and the public.

(4) Provide the media, especially in Georgia, with a program of service that will (a) contribute to the state of knowledge about the mass media, (b) assist the media in maintaining their economic stability, and (c) foster efforts by the media to provide maximum public service in the interest of a prosperous economy and an effective democracy.

(5) Aid citizens to understand, use, and evaluate the media more effectively.

Facilities

The School of Journalism is housed in a modern multimillion dollar communication center which provides some of the best instructional facilities available. Included are classrooms equipped with color television sets for closed-circuit broadcast, two large theater-style auditoriums, modern radio studios, color-equipped television studios plus complete packages of portable color television cameras and videotape recorders, newspaper and broadcast news facilities, advertising and graphics laboratories, photographic laboratories, film production and processing facilities, computerized news editing laboratories and typesetting equipment, and a learning resources center as supplement to the University Libraries. An elevator makes all floors of the building accessible to handicapped people.

*Hereinafter, the name is abbreviated to School of Journalism or School.

Accreditation

The School of Journalism is accredited by the American Council of Education for Journalism and Mass Communication. The accreditation applies to the School as a unit and to each of its sequences of study: Advertising, News-Editorial, Public Relations, and Radio-Television-Film.

Degrees Offered

The School of Journalism offers the undergraduate degree of Bachelor of Arts in Journalism (A.B.J.).

Through the Graduate School, the School of Journalism offers programs of study leading to the Master of Arts and Doctor of Philosophy degrees. Persons interested should contact the Director of Graduate Studies of the School of Journalism.

Undergraduate Admission

The academic program of students seeking the A.B.J. degree consists of two parts: (1) pre-journalism program taken during the freshman and sophomore years at either The University of Georgia or another institution and (2) the professional program taken in the School of Journalism. Pre-journalism students at The University of Georgia are enrolled in the College of Arts and Sciences.

Students presenting the highest qualifications (determined by overall grade point average) will be accepted into the School of Journalism each of the four quarters of the academic year. The number of student spaces available will vary from quarter to quarter.

Selections for the professional program will be made by the School's Admissions Committee in order of priority by overall grade point average according to sequence (Advertising, News-Editorial, Public Relations, Radio-TV-Film). The committee will be guided by the number of students who can be accommodated as determined by availability of staff and facilities. Meeting the minimum criteria assures consideration for admission but does not guarantee admission.

Minimum requirements for applying for admission are as follows:

1. Junior class standing: 90-120 quarter hours of credit. Consideration of students with more than 120 hours will be by petition only.
2. Overall grade point average of 2.50 or higher (combined average of The University of Georgia and transfer work).
3. SAT Verbal Score of 550 or higher or satisfactory score on an English proficiency test (Educational Testing Service Cooperative

English Expression Test), which may be taken no more than twice per quarter and must be taken prior to earning 120 hours.

4. Proof of typing proficiency.
5. Submission of an acceptable plan for completion of any remaining courses in the pre-journalism program.

University of Georgia students will submit their applications directly to the Office of Undergraduate Student Services of the School of Journalism.

Students desiring to transfer from other institutions should apply through The University of Georgia Office of Undergraduate Admissions. After admission to the University and meeting the minimum requirements listed above, a student may submit an application to the School of Journalism.

The English proficiency and typing tests are given on the University campus at specified times each quarter. Arrangements may be made to take these tests at other in-state institutions.

Approval of a student's request to change sequences after admission to the School of Journalism will be given only if the student's current overall average meets or exceeds the average established for admission to that sequence at the meeting of the Admissions Committee held during the quarter the request is made.

Second Degree Program

A person who holds a baccalaureate degree in a major other than journalism and mass communication from an institution accredited by a regional accrediting association may seek admission to candidacy for the A.B.J. degree as a second bachelor's degree.

Undergraduate students, including second baccalaureate degree candidates, who present the highest qualifications (determined by overall grade point average) will be accepted into the School each of the four quarters of the academic year. The number of student spaces available will vary from quarter to quarter.

Selections will be made by the School's Admissions Committee in order of priority by overall grade point average. This may be done schoolwide or according to sequence (Advertising, News-Editorial, Public Relations, Radio-TV-Film). The committee will be guided by the number of students who can be accommodated as determined by availability of staff and facilities. Meeting the minimum criteria assures consideration for admission but does not guarantee admission.

Minimum requirements for applying for ad-

mission include an overall grade point average (all college credit) of 2.70 on a 4.0 scale, satisfactory score on an English proficiency test or SAT verbal score of 550, and proof of typing proficiency.

Satisfactory completion of a minimum of 55 quarter hours will be required for the second degree. Additional hours may be required of students who lack sufficient prerequisite courses, such as in the humanities, social sciences, or complementary fields (for example, publication management majors must have a background of carefully selected business courses).

Persons considering this program should communicate with the Office of Undergraduate Student Services of the School of Journalism.

Irregular, Transient Students

In addition to second degree candidates, certain other students may be admitted, through the University's Office of Undergraduate Admissions, as irregular students. These persons, while in this status, are not candidates for a degree. Usually they are persons who have received bachelors' degrees and desire to take additional work or special students enrolling for a limited time period, such as international students. These persons normally are not assigned academic advisors but register through the Office of Undergraduate Student Services. An overall grade point average of 2.50 is the minimum required for applying for admission as an irregular student.

Transient students are those who are candidates for degrees at other institutions but are admitted for one quarter's work at the University with the idea of transferring the credits to the parent institutions. These students are not assigned advisors and should register through the Office of Undergraduate Student Services.

Programs for Superior Students

In order to encourage superior academic achievement, the School of Journalism endeavors to identify, recruit, and assimilate into the University's academic life students with outstanding academic potential.

These students, working with their academic advisors, often are able to develop programs of study which have greater flexibility and include advanced courses.

For example, qualified students have opportunity for independent reading and projects, honors theses, honors option courses, and area study majors.

The School of Journalism, through its

Honors coordinator, cooperates with The University of Georgia Advanced Placement and Honors Programs. Persons interested in the programs for superior students may obtain further information from the Office of Undergraduate Student Services of the School of Journalism.

Undergraduate Degree Requirements

In addition to School of Journalism requirements, A.B.J. degree candidates must meet general degree requirements applicable to all students at the University as set down in the general information section of this bulletin.

Hours and Residency

Journalism students must successfully complete a minimum of 195 quarter hours, including basic physical education.

All students must have a minimum of 90 quarter hours in residence at The University of Georgia to graduate. *No more than 55 hours of the 195 minimum for graduation may be taken in journalism courses.*

No more than 20 hours of journalism credit earned prior to a student's enrollment in the School of Journalism at The University of Georgia may be applied toward the satisfaction of requirements for the A.B.J. degree; this includes journalism courses taken at The University of Georgia, as well as those taken at other institutions.

Furthermore, no more than 20 hours of journalism credit earned at another senior institution or 10 hours at a junior college may be applied toward the satisfaction of requirements for the A.B.J. degree, regardless of whether these credits were earned prior to or after a student's enrollment in the School of Journalism at The University of Georgia.

Non-journalism students should not take more than 20 hours of journalism courses.

Grades

For a journalism course to count toward the A.B.J. degree, the student must obtain a grade of C or higher.

Re-Examinations

The School of Journalism follows the re-examination regulations of the University as set down in the general information section of this bulletin. In addition, the School of Journalism will not authorize a re-examination in a journalism course unless the final examination is the reason for making the insufficient grade.

Course Challenges

Students who feel that they have, outside the classroom, mastered the work in a specific course may challenge it for credit or for exemption without credit if it has been designated by the School of Journalism as a course that may be challenged.

Students desiring to challenge a journalism course should first discuss the challenge with the designated School official: Advertising Sequence head, News-Editorial Sequence head, Public Relations Sequence head, or Radio-TV-Film Sequence head.

Miscellaneous

Basic Physical Education: For students who entered The University of Georgia Fall 1977 or later, only the 5 credit hours of basic physical education required by the University may be applied toward the A.B.J. degree. For students who entered the University prior to Fall 1977, the maximum that may be applied is 6 credit hours of basic physical education.

Typing: Each student must demonstrate a typing proficiency before enrolling in any journalism courses numbered 260 and above. The requirement may be met in one of the following ways: (1) by passing a typing test administered by the School (40 words per minute for three minutes with a total of no more than five errors), (2) by completing a college credit course in typing with a grade of C or higher (at The University of Georgia EBE 303 is recommended), or (3) by providing certified evidence of having obtained the speed and accuracy stated above while engaged in a formal typing course at a post-secondary institution such as a vocational/technical school. (Details on these requirements may be obtained from the Office of Undergraduate Student Services of the School of Journalism.)

CrossListed Courses: For a student in the School of Journalism to receive credit toward the 195 hours required for graduation for a course crosslisted between journalism and another discipline, he/she must enroll under the journalism (JRL) prefix. The course will count in the hours of journalism credit required for the degree.

English 100: A student who is required to take English 100 will receive elective credit toward the 195 hours required for the A.B.J. degree. Exemption of English 100 will be without credit.

Graduate Courses: Only in a few exceptional cases are undergraduate students eligible for enrollment and credit in graduate courses (numbered 600, 700, 800, 900). If the course is

offered on both levels, the undergraduate student should be careful to register for the lower-numbered course (numbered 400, 500).

Petitions: Any student desiring a waiver in rules or curriculum requirements may submit a petition. Each sequence has a committee to consider variations to the established minors. Only the School's Executive Committee may grant exceptions to the School's rules and curriculum. Also, this committee must make a recommendation before the University Educational Affairs Committee will consider petitions concerning University rules and requirements.

The student prepares the petition on a form obtained from the Office of Undergraduate Student Services. If the request pertains to the minor, the student submits it to the sequence head for transmittal to the sequence committee on the minor. If it pertains to School of Journalism or University matters, it is submitted to the Office of Undergraduate Student Services.

Following action on a petition to the Executive Committee, the student is notified by letter; a copy is filed in the student's record in the Office of Undergraduate Student Services.

Dismissals: Students who are placed on first or second dismissal are encouraged to avail themselves of the services of the Counseling and Testing Center to help clarify their goals and to consider alternatives.

Internship and Cooperative Study

Under the internship plan, qualified students are given the opportunity to serve internships with the media or business organizations throughout the region and nation. Such an internship is considered highly beneficial to a student's total educational experience.

The student receives 1 credit hour for successfully completing the following internship requirements:

1. Internships must be approved in advance by the student's sequence head. A written request must be submitted by the student and must include a job description, length of internship, name of supervisor(s), and rate of pay. A letter verifying the internship must be submitted by the prospective employer.
2. To be eligible to serve an internship for credit, the student must have completed the Communication Core and Major Sequence Core.
3. Internships must cover a minimum of eight weeks of full-time employment. Under exceptional circumstances, a student may petition for waiver of this requirement.

4. The student must register for JRL 501 the quarter after completion of the internship.
5. A written report must be filed by the employer at the end of the internship, describing the duties performed and the quality of the student's work.
6. Each sequence may impose such other administrative and scholastic requirements as it deems necessary for fulfillment of a satisfactory internship.

If a student receives internship credit, it becomes a journalism elective and must be included in the maximum hours of journalism credit for the A.B.J. degree.

Under the cooperative study plan, two students alternate University study and employment in the field quarter by quarter.

Graduation Information

Each quarter the Registrar's Office sends an application for graduation form to every student who has completed 135 hours of credit but has not applied for graduation. Students are urged to complete the application immediately and follow the procedures and deadlines that both the University Graduation Office and the School of Journalism Office of Undergraduate Student Services have for graduation check-out. Taking care of these matters during the first quarter after achieving 135 hours will permit students to identify and solve most problems that could delay graduation.

Academic Advising

Selection of appropriate courses to meet degree requirements is the responsibility of the student. Certain printed material and the School's academic advising program are available to assist the student.

Students in the School of Journalism are assigned to academic advisors in their major sequences. Pre-journalism students in the College of Arts and Sciences are assigned to pre-journalism advisors.

Additional Information

Information concerning opportunities for experience, professional organizations, contacts with practitioners, and job placement assistance is included in the School of Journalism and Mass Communication Bulletin. A copy of this Bulletin may be obtained by writing to the Dean, School of Journalism and Mass Communication, The University of Georgia, Athens, Georgia 30602.

REQUIREMENTS FOR THE BACHELOR OF ARTS IN JOURNALISM DEGREE

	HOURS
Humanities	40
Mathematics and Natural Science	20
Social Science	30
TOTAL — Pre-Journalism Curriculum	90
Mass Communication Core	10
Major Sequence	45
Minor	30
Basic Physical Education	5
Non-Journalism electives	15
TOTAL	195

Explanation of Requirements

PRE-JOURNALISM CURRICULUM

	HOURS
HUMANITIES	40
ENG 101, 102	10
Literature—Any two of the following: ENG 231G, 232G, 233G; CML 221, 222; CLC 120, 121, 150; FR 211, 310, 311, 312; SP 211, 310, 311, 312, 313; GER 201, 202; GRK 401, 420; ITA 310, 311; LAT 420; RUS 401, 402	10
Foreign Language—Completion or exemption through the third quarter of one language: FR, GER, ITA, POR, RUS or SP 101, 102, 103; GRK or LAT 101, 102, 203; HBW 201, 202, 403	15
Humanities: FR 104; GER 104; GRK 304; HBW 404; ITA 104; LAT 304; POR 104; RUS 104; SP 104; PHY 101, 102; REL 115, 116; ART 287, 288, 289, 300; DRA 300, 312, 320; MUS 300, 355	5
MATHEMATICS AND NATURAL SCIENCE	20
Mathematics: MAT 100	5
Lab Science (two-course sequence): AST 107-107L, 108-108L; BIO 101-101L, 102-102L; BOT 121-121L, 122-122L; CHM 111 and 111L, 112 and 112L or 121 and 121L, 122 and 122L; PCS 127-127L, 128-128L or 137-137L, 138-138L; GGY 120-120L, 121-121L, 122-122L (any two); GLY 115-115L, 116-116L or 125-125L, 126-126L	10
Math/Science: CSC 201; GGY 104; MAT 105, 109, 116; PCS 101; PHY 110; STA 200, 221 (Pre-journalism students who anticipate being advertising majors are advised to select STA 200.)	5

SOCIAL SCIENCE	30
American Government:	
POL 101	5
American History:	
HIS 251, 252	5
History (any course 111-399)	5
Economics:	
ECN 105, 106, 545	5
Social Science: ANT 102; GGY 101, 102, 320; PSY 101, 259; PSY (SOC) 256; SOC 105, 260; SPC 108 or SPC (MAN) 109	10

JOURNALISM CURRICULUM

MASS COMMUNICATION CORE	HOURS
	10

The mass communication core curriculum exposes students to a wide range of knowledge and thought common to all mass communication media and areas.

JRL 101 Mass Communications I: Survey	5
JRL 504 Law of Communication	5

MAJOR SEQUENCES

The four major sequences available to students in the School of Journalism are **Advertising**, **News-Editorial** (with majors in broadcast news, magazines, newspapers, and publication management), **Public Relations**, and **Radio-Television-Film** (with a major in telecommunication arts).

MINOR

The minor includes those subjects outside the School of Journalism that will be most useful to the major field of study. Minor courses are selected with the advice and approval of the student's advisor and major sequence.

NON-JOURNALISM ELECTIVES

Within the program of study, every student may select several elective courses to complete the total requirement of 195 quarter hours. Any course, except journalism or basic physical education, that is not already a part of the student's program may be selected as an elective.

BASIC PHYSICAL EDUCATION

TOTAL REQUIREMENTS FOR BACHELOR OF ARTS IN JOURNALISM DEGREE	195
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Major Sequences

ADVERTISING

This sequence is designed to give the student an understanding of the principles of advertising. Emphasis is given to planning and execution of media and creative techniques, as well as to advertising sales. The courses listed are in addition to the hours required in the mass communication core curriculum.

Sequence Core

Three 5-hour courses required:

JRL 310 Principles of Advertising	15
311 Advertising Copy Writing	
312 Advertising Media	

Sequence Major

Three 5-hour courses selected from the following:

JRL 352 Graphic Communications	15
523 Mass Communications Research	
571 Advertising Strategy	
574 Advertising Campaigns	
578 Retail Advertising	
579 Advanced Advertising Copy	
584 Radio-Television Advertising	
598 Industrial Advertising	

Journalism Electives

Three additional journalism courses.

Note: All students admitted to the School who select advertising as their major will be required to complete STA 200 or equivalent. The credit may be used in the mathematics and natural science requirement in the pre-journalism curriculum, in the minor, or in the non-journalism electives.

NEWS-EDITORIAL

This sequence prepares students for careers with newspapers, press associations, magazines, and radio and television news operations. A student may concentrate studies in one of four majors: newspapers, magazines, broadcast news, and publication management. The courses listed for each concentration are in addition to the hours required in the mass communication core curriculum.

NEWSPAPERS

Sequence Core

Three 5-hour courses required:

JRL 260 News Writing and Reporting	15
351 Editing and Makeup	
530 Public Affairs Reporting	

Sequence Major

Three 5-hour courses selected from the following:

JRL 280 Photocommunications I: Basic Photography		
535 Advanced Editing and Makeup		
553 Editorials and Issues		
558 Magazine Article Writing		
560 Investigative Reporting		
567 Contemporary American Newspapers		
<i>Journalism Electives</i>	15	
Three additional journalism courses.		
MAGAZINES		
<i>Sequence Core</i>	15	
Three 5-hour courses required:		
JRL 260 News Writing and Reporting		
351 Editing and Makeup		
558 Magazine Article Writing		
<i>Sequence Major</i>	15	
Three 5-hour courses selected from the following:		
JRL 280 Photocommunications I: Basic Photography		
530 Public Affairs Reporting		
538 Contemporary American Magazines		
553 Editorials and Issues		
559 Critical Writing and Reviewing		
560 Investigative Reporting		
570 Advanced Projects in Magazines		
<i>Journalism Electives</i>	15	
Three additional journalism courses.		
BROADCAST NEWS		
<i>Sequence Core</i>	15	
Three 5-hour courses required:		
JRL 260 News Writing and Reporting		
381 Radio-Television News		
384 Basic Radio-TV-Film Production		
<i>Sequence Major</i>	15	
Three 5-hour courses selected from the following:		
JRL 280 Photocommunications I: Basic Photography		
515 Telecommunications Announcing		
530 Public Affairs Reporting		
560 Investigative Reporting		
586 Film Production I		
588 Advanced Radio-Television News		
<i>Journalism Electives</i>	15	
Three additional journalism courses.		
PUBLICATION MANAGEMENT		
<i>Sequence Core</i>	15	
Three 5-hour courses required:		
JRL 260 News Writing and Reporting		
351 Editing and Makeup		
564 Newspaper Management		
<i>Sequence Major</i>		15
Three 5-hour courses selected from the following:		
JRL 280 Photocommunications I: Basic Photography		
310 Principles of Advertising		
311 Advertising Copy Writing		
352 Graphic Communications		
530 Public Affairs Reporting		
535 Advanced Editing and Makeup		
<i>Journalism Electives</i>		15
Three additional journalism courses.		
PUBLIC RELATIONS		
This sequence is designed to give the student an understanding of the theory and practice of effective public relations. Media and public opinion research and the two-way communication concept are stressed. The courses listed are in addition to the hours required in the mass communication core curriculum.		
<i>Sequence Core</i>		15
Three 5-hour courses required:		
JRL 260 News Writing and Reporting		
352 Graphic Communications		
385 Public Relations		
<i>Sequence Major</i>		15
Three 5-hour courses selected from the following:		
JRL 523 Mass Communications Research		
590 Business and Industrial Publications		
591 Public Relations Administration		
592 Public Relations Communications (required)		
595 Public Relations Campaigns		
<i>Journalism Electives</i>		15
Three additional journalism courses.		
RADIO-TELEVISION-FILM		
This sequence, which offers a major in telecommunication arts, provides students with professional courses of study in both theory and practice of radio, television, and film. Students who elect to major in the sequence are required to successfully complete a sequence core of 15 hours and a sequence major of 10 hours as general foundation prior to specializing in an emphasis area. The courses listed are in addition to the hours required in the mass communication core curriculum.		
<i>Sequence Core</i>		15
Three 5-hour courses required:		
JRL 301 Introduction to Broadcasting		
302 Broadcasting and Film Techniques of Analysis		
384 Basic Radio-TV-Film Production		

Sequence Major

Two 5-hour courses required:

JRL 383 Basic Writing for Radio-Television-Film

One basic studio course selected from the following:

JRL 514 Television Production I

518 Audio Production I

586 Film Production I

Emphasis Electives

A student will select 20 hours to develop, in depth, a program of study in radio, television, or film. Selection of these courses will not be limited to those offered by the sequence. By careful selection of courses in this area, in concert with the minor, the student can attain competence in emphasis areas of production, writing, or management-sales. Thus a student, with the assistance of an advisor, can develop a unique program suited to individual career objective.

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301. Introduction to Broadcasting. 5 hours.

This broad survey introduces the student to the structure of mass telecommunication in the world with emphasis on the systems in the United States, the regulatory features of the systems, the impact of technology, the economic dynamics, and the range of career possibilities of the systems (including radio, television, recordings, cable).

302. Broadcasting and Film Techniques of Analysis. 5 hours.

This course will introduce students to three major analysis techniques commonly found in broadcasting and film: content analysis, audience analysis, and economic analysis. Included are methods of quantitative message analysis, basic audience research techniques such as ratings, concept testing and audience profiling, and studies of the impact of production economics on diversity. Student participation in both laboratory and field studies may be required.

303. Broadcast Programming. 5 hours.

Study of the methods by which radio and television program schedules are developed. Topics considered include ratings, program sources, radio program formats, program automation, the syndication market, public station programming, cable services, and subscription program sources.

310. Principles of Advertising. 5 hours.

A course providing a broad understanding of advertising—how it fits into the economy, how it works, and how it is created.

311. Advertising Copy Writing. 5 hours.

Prerequisite: JRL 310 or MKT 360.

Principles and practices in the presentation of copy for a variety of media. Reader surveys, copy tests, and a study of products in relationship to copy and markets are a part of this course.

312. Advertising Media. 5 hours.

Prerequisite: JRL 310 and STA 200.

A study and evaluation of the principal advertising media, including newspapers, magazines, trade publications, radio, television, outdoor, novelty, and cinema. The work of an advertising agency or office and the selling of space or time are considered.

351. Editing and Makeup. 5 hours. Lectures and lab periods.

Prerequisite: JRL 101 and 260.

A practical course in the selection and preparation of written and pictorial materials for newspapers, magazines, and related media.

COURSES OF INSTRUCTION

JOURNALISM (JRL)

101. Mass Communications I: Survey. 5 hours.

A survey of the structure and function of contemporary mass media from an historical and descriptive perspective, with some attention paid to problems and criticisms of the media.

260. News Writing and Reporting. 5 hours.

Lectures and lab periods.

Prerequisite: JRL 101.

A study of basic reporting, writing, and editing practices with practical assignments in the various media.

280. Photocommunications I: Basic Photography. 5 hours. Lectures and lab periods.

This course introduces the student to modern theories and practices of photography. Included are instructions in the operation of adjustable cameras; lighting techniques; characteristics of photographic film and paper; use of exposure meters, filters and other accessories; basic darkroom techniques, including film processing, printing, enlarging, and photo-finishing.

352. Graphic Communications. 5 hours. Lectures and lab periods.

Prerequisite: JRL 101 or permission of school. A study of printing processes, typography, photoengraving, layout and design, production planning, and related topics.

371. Photocommunications II: Intermediate Photography. 5 hours. Lectures and lab periods.

Prerequisite: JRL 280.

Development of advanced techniques and procedures, emphasizing lighting, processing, and composition. Included are picture editing and print finishing for publications.

381. Radio-Television News. 5 hours. Lectures and lab periods.

Prerequisite: JRL 260 and 384 or permission of school.

Techniques of gathering, writing, and broadcasting news on radio and television. Actual reportorial assignments, studio production of both radio and television newscasts, utilization of wire copy, photographs, taped inserts, news-film. Use of the tape recorder and the 16mm camera in news operations.

383. Basic Writing for Radio-Television-Film. 5 hours.

Prerequisite: Permission of school.

A study of the problems of writing for the telecommunications industry. Introduction to special scripting requirements of radio, television, film, recording, and cable formats. Emphasis will be upon working from the creation of the idea to final script.

384. Basic Radio-TV-Film Production. 5 hours.

Prerequisite: Permission of school.

Basic theory and practice, studio operations in radio, television, film, recording, and cable—with laboratory experience in the use of control boards, records, cameras, switching and editing equipment, microphones, and related equipment. An understanding of the problems of production, design, direction, and performance.

385. Public Relations. 5 hours.

Prerequisite: JRL 101 or permission of school.

A study of principles and techniques. Research in interpersonal and mass communications with emphasis on effectiveness and studies among various publics.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

501. Mass Communications Internship. 1 hour.

Prerequisite: Completion of sequence core requirements or permission of sequence chairman.

Supervised experience in mass communications.

504. Law of Communication. 5 hours.

Prerequisite: JRL 101 and one of the following: JRL 260, 301, 310, or 385.

A broad application of principles of law to the mass communication media, media practice, advertising, and freedom of information, including libel, contempt of court, right of privacy, copyright, and postal laws.

508. International Mass Communication. 5 hours.

Prerequisite: JRL 101.

A course designed to help students gain an understanding of the mass media of the world—what they are like, how they operate, and what impact they have. Philosophies of different systems will be compared, as well as efforts at development or regulation of these systems. Attention will be given to print and electronic media and to international news agencies.

513. Telecommunication Regulation. 5 hours.

A survey of regulatory agencies concerned with telecommunication (radio, television, cable), important regulatory principles from law, regulatory practice, and common law. Emphasis will be upon the regulatory issues faced by the professional in telecommunication, including the development and use of self-regulatory codes.

514. Television Production I. 5 hours.

Prerequisite: JRL 383 and 384.

Theory and application of visual/aural telecommunication principles to informational messages. Student productions will be prepared, critiqued, and tested.

515. Telecommunications Announcing. 5 hours.

Prerequisite: Permission of school.

Specialized telecommunication performance situations will be created to allow the student to apply appropriate principles. Basic study will involve standard American foreign pronunciation as well as physical aspects of performance. Course structure will allow the student

to devote laboratory time to individual performance and announcing interests. The course is intended for students with experience or demonstrable ability in this area.

516. Television Production II. 5 hours.

Prerequisite: JRL 514.

An advanced study of television directing with special emphasis on the aesthetics of the medium. The student will work in a full-color studio and will utilize the television equipment for a means of communicating effectively with the television medium.

517. Advanced Studies in Mass Communication. 1-5 hours.

Prerequisite: Senior standing and permission of school.

Independent study or special projects in any area of mass communications for majors in the School of Journalism. Written proposal outlining the work to be undertaken must be submitted and receive the instructor's approval before the student will be permitted to register for the course. Students will be responsible for insuring the funding of their projects.

518. Audio Production I. 5 hours.

Prerequisite: JRL 384.

Theory and application of sound recording in message preparation. Acoustics, microphone selection and placement, editing, and mixing in both studio and field settings will be subjects of discussion and laboratory sessions.

520. (SPC) Communication Theory. 5 hours.

See SPC 520.

521. Social Effects of Mass Communication. 5 hours.

Prerequisite: JRL 101 or two senior level courses in psychology, sociology, or speech communication.

The interaction between mass communication and the social institutions of our society—its effects, uses and potential—will be critiqued and analyzed, specifically delving into mass media's effect on children, attitudes and values, minority groups, and social behavior. Current research literature in the field will be analyzed and methods of improving the system will be discussed.

522. (SPC) Mass Communication and Persuasion. 5 hours.

Prerequisite: JRL 101 or two senior level courses in psychology, sociology, or speech communication.

An examination of approaches utilized to investigate mass communication as a persuasive process. The history of theoretical and empirical development in this area as well as

recent developments are studied with particular focus on attitude change through communication, the nature of communication in relation to institutionalized communications media, and the effects of persuasive communication on attitudes and opinions.

523. Mass Communications Research. 5 hours.

Prerequisite: One course in statistics.

Introduction to experimental and survey design for research in the field of mass communications. A survey of methodology in conjunction with mass communications research case studies, problems, and class research projects.

524. History of Broadcast Programming. 5 hours.

The process by which entertainment and informational communication have developed in telecommunication systems. Viewing and listening of early programs, study of stage, cinema, and folklore productions of the past as well as principal theories of program function will be studied.

525. Broadcast Management I. 5 hours.

Prerequisite: JRL 301.

Theory and application of management practices in the administration of telecommunication businesses. Cost and revenue management, use of research, rate setting, capital and operations budgeting, personnel management, and program syndication.

526. Broadcast Management II. 5 hours.

Prerequisite: JRL 310, 525, or permission of school.

A focus on the management of a broadcast station's inventory, including the analysis of increasing revenues and productivity and serving client needs.

527. Cable System Operations. 5 hours.

Prerequisite: JRL 301 or permission of school.

A study of the operation and management of multi-channel cable systems including the history and development of regulation; satellite distribution; production planning; economics; and future of non-broadcast television.

530. Public Affairs Reporting. 5 hours.

Prerequisite: JRL 260 and 351.

An advanced course in analyzing, interpreting, and reporting governmental affairs at local, state, and national levels. Students cover assignments for student and professional media.

532. Public Opinion Reporting. 5 hours.

Prerequisite: JRL 260 and 351 or permission of school.

An examination of public opinion, its nature and study techniques, propaganda, and media

interaction with society, with emphasis upon the measurement of public opinion and interpretation of data. Students will prepare reports of findings for publication in print and broadcast media.

535. Advanced Editing and Makeup. 5 hours.
Lectures and lab periods.

Prerequisite: JRL 101, 260, and 351.

A course in the planning and processing of special pages and sections of newspapers and magazines. Consideration is also given to legal and ethical problems and to the effects of technological developments on staff organization, production, and graphic design.

537. Photocommunications III: Photojournalism. 5 hours. Lectures and lab periods.

Prerequisite: JRL 260, 280, and 351.

An advanced course in the taking, processing, editing, and use of photographs for news, feature, and advertising copy for newspapers, magazines, related media, and public relations, with emphasis on the use of photographs in the presentation of news.

538. Contemporary American Magazines. 5 hours.

Prerequisite: JRL 101 or permission of school.

A survey of contemporary American magazines and their role in society. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography, and technology.

549. History of the Mass Media in the United States. 5 hours.

Prerequisite: JRL 101 or permission of school.

A survey of the mass media in the United States from the colonial period to the present. Special attention is given to newspapers, magazines, radio, and television and their relationship to the history and development of the nation.

553. Editorials and Issues. 5 hours.

Prerequisite: JRL 260 and 351.

A study of editorial policies, ethics, influence, and techniques. Students analyze, discuss, and write editorials about local, state, and national issues.

558. Magazine Article Writing. 5 hours.

Prerequisite: JRL 260 and 351 or permission of school.

A practical course in writing various types of articles and features for magazines, magazine sections of newspapers, and other periodicals.

559. Critical Writing and Reviewing. 5 hours.

Prerequisite: JRL 260 and 351.

A course in criticizing and reviewing books, plays, television, films, and other arts for newspapers, magazines, and related media.

560. Investigative Reporting. 5 hours.

Prerequisite: JRL 530 or equivalent and senior standing.

Practice in and study of investigative, interpretative, and in-depth reporting for the mass media. Students will develop reporting projects in the field of public affairs in keeping with their interests and background.

564. Newspaper Management. 5 hours.

Prerequisite: JRL 101.

A study of the business and editorial management of daily and weekly newspapers, including circulation, advertising, and promotion.

566. Journalism in the Secondary School. 5 hours.

Prerequisite: JRL 101 or permission of school.

A survey of news gathering, news writing, copy reading, typography, and business management, with specific relation to the high school newspaper, also school public relations.

567. Contemporary American Newspapers. 5 hours.

Prerequisite: JRL 101 or permission of school.

A study of the newspaper and its role in America today. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography, and technology. Leading papers in various sections are examined closely.

570. Advanced Projects in Magazines. 5 hours.

Prerequisite: JRL 558.

An independent projects course in magazines. Most projects are concerned with the writing of magazine articles, particularly series of articles. Students may select projects related to other phases of magazine production.

571. Advertising Strategy. 5 hours.

Prerequisite: STA 200 or equivalent, JRL 311, 312, and MKT 360.

This course provides an analytical basis for setting advertising objectives, coordinating advertising campaigns, and measuring advertising results from a strategic perspective.

574. Advertising Campaigns. 5 hours.

Prerequisite: JRL 310, 311, and 312, or permission of school.

Planning, preparing, and presenting research, copy, and layout for a national advertising campaign. Class groups function as an advertising agency. Emphasis on media, copy, and marketing research.

578. Retail Advertising. 5 hours.

Prerequisite: JRL 310 and 311.

Preparation of advertising for various types of retail advertisers and for the various media used by the retailer.

579. Advanced Advertising Copy. 5 hours.

Prerequisite: Grade of B or better in JRL 311 and permission of school.

A continuation of JRL 311 with greater emphasis on creative writing and designing of advertising for national media. Strong emphasis is on individual projects in the form of a professional portfolio of creative efforts.

584. Radio-Television Advertising. 5 hours.

Prerequisite: JRL 311 and 384, or permission of school.

An intensive study of the role of advertising in broadcasting. Copy preparation and studio production of both radio and television commercials. Examination of commercials to illustrate basic concepts and techniques.

586. Film Production I. 5 hours.

Prerequisite: JRL 260, 383, and 384.

Production for telecommunication using film and other portable production equipment. Students will participate in laboratory and field work.

588. Advanced Radio-Television News. 5 hours. Lectures and lab periods.

Prerequisite: JRL 381 and 586.

Advanced methodology in gathering and producing news for radio-television. Students will use sound film cameras and audio recording equipment. Analysis of news sources and problem areas unique to the broadcast journalist is emphasized.

590. Business and Industrial Publications. 5 hours.

Prerequisite: JRL 352 or permission of school.

Study of the purpose, content, appearance, writing, and editing of various types of company, business, and association publications, including internal and external house publications.

591. Public Relations Administration. 5 hours.

Prerequisite: JRL 385.

A study of the operation and objectives of corporate public relations programs using the case study approach. Emphasis is given to relating the management function of decision-

making and policy formulation to the communication process.

592. Public Relations Communications. 5 hours.

Prerequisite: JRL 260, 352, and 385.

Use of audio, visual, and written tools and techniques with emphasis on public relations writing and editing. Attention is given to objectives, content, style, graphic presentation, and effectiveness in information dissemination to internal and external publics. Consideration is given to selection and utilization of communications media with emphasis on interpretation of the business, industrial, institutional, and associational story.

595. Public Relations Campaigns. 5 hours.

Prerequisite: JRL 385 and two of the following: JRL 523, 591, or 592.

Research, planning, and preparation of an integrated public relations campaign. Campaigns will alternate among business, governmental, institutional, and organizational problems.

596. Film Production II. 5 hours.

Prerequisite: JRL 586.

Advanced theory and application of techniques of studio and second unit production of complicated entertainment and informational programming on film. Students will produce messages using advanced cinematographic techniques.

598. Industrial Advertising. 5 hours.

Prerequisite: JRL 310 or permission of school.

A study of the role, responsibilities, principles, and techniques of business and industrial advertising. (Not open to business administration majors.)

599. Seminar in Telecommunication. 5 hours.

A senior level seminar designed to synthesize and integrate many of the theoretical and practical approaches to the study of radio, television, and film with an aim toward analyzing the process and effects of mass communication on the individual, the media industries, and the society.

THE SCHOOL OF LAW

ADMINISTRATIVE OFFICERS

J. Ralph Beard, B.S., LL.B., LL.M., *Dean*
Ellen R. Jordan, A.B., J.D., *Associate Dean*
Robert D. Brussack, A.B.J., J.D., *Assistant Dean*

GENERAL INFORMATION

Accreditation

The School of Law is a member of the Association of American Law Schools and is on the approved list of the American and Georgia Bar Associations.

Purposes

The courses of study offered in the School of Law are designed to give a thorough knowledge of the Anglo-American system of common law and to familiarize the student with statutory laws. Emphasis is placed on teaching the student how to make a practical application of the legal principles learned. The School also undertakes to shape the interests and aims of its students so as to make them respected and useful citizens and to instill in them that high sense of personal honor and regard for professional ethics that should characterize members of the legal profession.

Method of Instruction

In general, the School operates under the case method of instruction designed to enable students to master the common law and equity as working systems. The student studies actual cases, deducing from them the principles of law involved, and this approach tends to develop in the student the power of analysis of legal problems. In addition, however, the study of cases is supplemented by statutory and textual materials. Instruction is also given in the drafting of legal instruments by requiring the students to prepare, under the supervision of an instructor, contracts, leases, deeds, wills, charters, and other legal documents.

Practical instruction in the preparation and trial of cases is given in a practice court under conditions made as nearly as possible like those

prevailing in the courts of the state of Georgia. The work of this court is carried on under the direction of a member of the faculty, judges, and practitioners. Exercises conducted relate to the preparation of pleadings, examination and cross-examination of witnesses, writing of briefs, presentation of arguments to the court and jury, taking of cases from lower courts to appellate courts, and other related subjects.

Facilities

The School of Law is housed in a modern complex constructed on the original wooded quadrangle of the University's North Campus. Completed in 1967, the building contains 135,739 square feet of space. In addition to its lecture halls, seminar rooms, and administrative and faculty offices, the law center houses a 500-seat instructional auditorium and federal-styled courtroom. Two student lounge areas and 20 student organization offices are provided in the complex.

The law library, with its two-story ceiling and glass wall, is spacious and well-illuminated. The library, with its 346,000 volume count, is one of the 25 largest law libraries in the United States. The collection includes a comprehensive listing of material on Anglo-American law as well as an extensive holding in the law of international relations and foreign law.

A new law library annex opened in 1981. The structure houses a spacious reading room, shelf space for one-third of the present collection, student journal offices and audio-visual instructional facilities. The library offers the LEXIS computerized research system.

Degrees Offered

The School of Law offers the Juris Doctor and Master of Laws degree. Complete information about these degree programs may be found in the Law and Graduate School Bulletins.

Special Programs

Continuing Legal Education

In 1965, the School of Law joined with the State Bar of Georgia and the law schools of

Mercer and Emory Universities in the establishment of the Institute of Continuing Legal Education in Georgia. In the spring of 1978, the Institute of Continuing Judicial Education came into being through the sponsorship of the School of Law and Georgia's Judicial Council. The two institutes, which are housed in and staffed by the School of Law, plan and conduct seminars and short courses for judges and general practitioners throughout the State of Georgia.

Sibley Lectures

Supported by a private foundation, the John A. Sibley Lectureship in Law brings to Athens outstanding legal scholars who meet with regularly scheduled classes and lecture in their fields of expertise.

Clinical and Writing Programs

Law students attending The University of Georgia may participate in activities which include: two scholarly journals, two clinical programs, Moot Court competitions, student government, three legal fraternities, nine special interest organizations and a newspaper staff.

The *Georgia Law Review* and the *Georgia Journal of International and Comparative Law*, edited entirely by students, are nationally circulated publications which provide a review of recent literature and developments in the legal field.

Practical education in criminal and civil procedure is a benefit of the Prosecutorial Clinic and Legal Aid and Defender Society. Under supervision of practicing attorneys who are also members of the faculty, students have the opportunity to develop counseling, investigatory and trial skills. Through authority of an act of the Georgia General Assembly, certified third-year students are permitted to try cases in the civil and criminal courts of the Western Judicial Circuit.

The School of Law sponsors teams in eight major national and regional Moot Court competitions. Team members are drawn from among outstanding candidates in an annual intramural competition.

Georgia's Student Bar Association is affiliated with the Law Student Division of the American Bar Association. Also included in student government is the Honor Court. Student interest organizations include the Environmental Law Society, Women Law Students Association, Student Advocacy Club, Black American Law Students Association and Law Students Civil Rights Research Council.

Placement

The School of Law offers assistance to every law graduate in securing suitable professional employment. Through the placement office the law student is offered guidance and counseling in selecting an employment objective.

While the state of Georgia continues to attract most of the law graduates, students are accepting positions in many other regions. Graduates are located throughout the United States and in several foreign countries where they are serving in judicial clerkships, corporate counsel and government attorney positions, as well as in private practice.

Scholarships, Loans and Student Employment

Law students are eligible for scholarships, grants, loan funds and employment as research assistants through the University and the Law School. See the Law School Bulletin, or write to the Director of Admissions of the School of Law for further information.

Admission

General Requirements

An applicant for admission to the School of Law as a candidate for the degree of Juris Doctor must hold a bachelor's degree from an accredited (as defined in AALS and ABA regulations) college or university. Compliance with minimum standards does not, however, guarantee admission. "Acceptable required work" connotes more than satisfaction of minimum academic requirements; it represents rather, substantial scholastic attainment. Moreover, suitability of applicants for admission is gauged not only by their undergraduate record, but also by their character and reputation, the nature of their training and experience, and by their demonstrated aptitude for the study of law.

The School of Law does not require a specific pre-legal course of study. The prospective law student is encouraged to seek a broad general education which will tend to develop ability to communicate with others both orally and in writing and yet impart substantive knowledge of genuine intellectual context. Any subject content, regardless of field, which helps develop clear and systematic thinking, constitutes sound preparation for the study of law.

Law School Admission Test

Questions relating to the Law School Admission Test, the Law School Data Assembly Service and application procedures should be addressed to the Admissions Office, School of Law, The University of Georgia, Athens, Georgia 30602.

Transfer Students

The dean may, at his discretion, give full credit for work completed in law schools registered as members of the Association of American Law Schools and approved by the American Bar Association. It is recommended that transfer be requested only after completion of at least one year of study, and prior to beginning the third year of study, in order to meet residence requirements for a degree. Transfer requests should be made directly to the Law School Admissions Office.

THE COLLEGE OF PHARMACY

ADMINISTRATIVE OFFICERS

Howard C. Ansel, B.S., M.S., Ph.D., *Dean*
Durward N. Entrekin, B.S., M.S., Ph.D., *Associate Dean*

GENERAL INFORMATION

Accreditation

The College of Pharmacy is accredited by the American Council on Pharmaceutical Education.

Purpose

The purpose of the College of Pharmacy is to provide for the comprehensive academic needs of the profession of pharmacy. Manpower needs of the profession are supplied through the College's baccalaureate and doctor of pharmacy educational program which prepares students for the practice of pharmacy, and through its graduate program which prepares individuals for professional specialization and for a career in teaching and research. The postgraduate educational needs of the profession are met by the College's continuing education and service programs. Faculty research supports all of these programs and contributes to the advancement of the body of pharmaceutical knowledge.

Facilities

The Robert C. Wilson Pharmacy building won an award for design excellence from the American Institute of Architects. Encompassing some 96,000 square feet of space, it is completely air-conditioned and is equipped with classrooms, laboratories, and research facilities.

Degrees Offered

The College of Pharmacy offers the Bachelor of Science in Pharmacy and the Doctor of Pharmacy degrees. Complete information about these degrees may be obtained from the College of Pharmacy.

Graduate Study

The Graduate School of The University of Georgia offers the Master of Science and Doctor of Philosophy degrees in various specialty areas of pharmacy. Complete information about these degree programs may be found in the College of Pharmacy and Graduate School Bulletins.

Pre-Pharmacy Core Curriculum

	HOURS
AREA I HUMANITIES	20
ENG 101, 102	10
SPC 108	5
Literature—if literature is not included in the English courses, a course must be chosen from: CLC 120, 121; CML 221, 222; ENG 231G, 232G; ENG 301, 302, or 323; or foreign languages (intermediate level)	5
AREA II MATHEMATICS AND NATURAL SCIENCE	20
MAT 116*	5
CHM 121 and 121L, 122 and 122L, 123 and 123L	15
AREA III SOCIAL SCIENCES	20
HIS 251 or 252	5
POL 101	5
ECN 105 or 106 (106 preferred)	5
Elective—may be chosen from: ANT, CLC 311, HIS, POL, PSY, SOC	5
AREA IV COURSES RELATED TO MAJOR	35
CHM 240 and 240L, 241 and 241L	10
BIO 101-101L, 102-102L	10
PCS 127-127L, 128-128L	10
PEB 100-165	5

Applicants should take the Pharmacy College Admission Test during the fall term immediately prior to their entrance date. For more information on the pharmacy professional programs, obtain a copy of the Pharmacy Bulletin from: Dean, College of Pharmacy, The University of Georgia, Athens, Georgia 30602.

*MAT 253 suggested as a substitute if student qualifies.

THE SCHOOL OF SOCIAL WORK

ADMINISTRATIVE OFFICERS

Charles A. Stewart, B.S., M.A., M.S.S.W., Ph.D.,
Dean

Richard J. Anderson, B.A., M.S.W., Ed.D.,
Associate Dean

T. Ray Mills, B.S., M.S.W., *Director, Undergraduate Program*

GENERAL INFORMATION

The Bachelor of Social Work degree is the first professional social work degree. This program of study prepares the student for beginning professional practice as a social worker. The liberal arts base combined with appropriate professional courses provides the fundamental knowledge and skill needed to assume the role of a competent practitioner. The appropriate social work value and ethical base necessary for professional practice is also a central part of the curriculum. The student exits the B.S.W. program as a generalist in the field of human services.

Purposes and Goals

The goal of the School of Social Work is to provide an education designed to prepare the undergraduate student for beginning professional social work practice.

This goal is to be realized through:

(1) Providing intellectual stimulation for students in a search for knowledge and truths and to aid them in developing problem solving processes for professional use in helping individuals, families, groups, and communities.

(2) Helping to develop student learning and introspective stances which will serve their lifelong learning needs and development of self-awareness.

(3) Motivating students to evaluate and use research findings and recognize the need for further research regarding human problems.

(4) Enabling students to gain knowledge and to develop values and skills appropriate for beginning professional social work practice.

Career Opportunities

Graduates holding a baccalaureate degree in Social Work will be prepared for practice in a wide variety of human service programs. Some examples are: child welfare; income maintenance; hospital social services; programs for the elderly; juvenile corrections; mental health and retardation services. These are but a few of the job opportunities available to graduates.

Facilities

The School of Social Work is located in Tucker Hall on South Campus. Extensive University resources enrich the curriculum of the School of Social Work. Research facilities include the resources of the Computer Center, the Institute of Behavioral Research, and the Social Work Research Center.

Degree Offered

The School of Social Work offers the undergraduate degree of Bachelor of Social Work (B.S.W.).

Accreditation

The Bachelor of Social Work degree program is accredited by the Council on Social Work Education.

Graduate Study

The degree of Master of Social Work (M.S.W.) is offered by the Graduate School of the University. Refer to the Graduate School Bulletin for further information.

Advising

Selection of appropriate courses to meet degree requirements is the responsibility of the student. Certain printed material and the School's academic advising program are available to assist the student. Students are expected to arrange appointments with their advisors regularly for planning programs of study and course selection.

Each student in the School of Social Work is assigned to an academic advisor. Freshmen and sophomores have a general advisor; juniors and seniors have a permanent professional advisor to help with the student's course of study and professional development.

Honors Program

Qualified students are encouraged to participate in The University of Georgia Honors Program. Appropriate academic advising is provided for B.S.W. students who are also in the Honors Program.

Undergraduate Admission

The academic program for students seeking the B.S.W. degree is composed of two parts: (1) lower division enrollment for freshman, sophomore and transfer students preparing for entry into the professional program; (2) upper division professional program completed during the junior and senior years.

Admission to the upper division professional program occurs at the rising junior level. Students must have completed a total of 60 hours (exclusive of basic PE credits) including SW 215 and SW 220 prior to making application for admission to the professional program. Applicants for the upper division professional program must have achieved the following: (1) a minimum combined average of 3.0 for SW 215 and SW 220; (2) an overall GPA of 2.0 or above; (3) an advisor approved human service experience (prior work or volunteer experience may in some cases meet this requirement).

In addition, students seeking admission to the professional program will be evaluated in a half-day admissions workshop. On occasion, provisional admission to the professional program may be stipulated for non-academic reasons. In instances of provisional admission the provisions will be stipulated in writing. Students seeking admission to the professional program must fill out and return an application form. Forms are available at the Office of the Director, Undergraduate Program, School of Social Work, Tucker Hall.

Academic Standards

A grade of 2.0 or better must be earned in each major course. Students receiving a grade of less than 2.0 for a major course must retake the course and achieve a satisfactory grade in order for the course to be credited toward graduation. A cumulative average of 2.0 or

better on all work completed at the University is required for graduation.

Students receiving a D (1.0) in SW 391A or SW 391BCD may retake the course once to attempt achievement of a 2.0 or better. In the event a 2.0 or better is not achieved upon the student's retaking the course, the student will be dismissed from the professional program. Students receiving a grade of F (0.0) in SW 391A or SW 391BCD will be automatically dismissed from the professional program. Students may appeal dismissals to the dean of the School of Social Work.

Undergraduate Degree Requirements

Students are required to acquaint themselves with general degree requirements applicable to all students of the University as set down in the general information section of this bulletin.

The undergraduate social work curriculum is comprised of three basic parts. One hundred and ten hours of the curriculum are designated to be taken in general education courses including five hours of basic physical education; sixty hours are to be taken in social work and twenty-five hours as electives for a total of 195 hours.

The general education category includes eight sections: Communication Skills; Political Science and Economics; Mathematics and Research Development; Biological Sciences; History; Physical Education; Cultural Studies and Human Behavior. These sections provide a liberal arts base and thus lay the foundation for development of the knowledge, skills, and attitudes needed in professional practice.

The undergraduate social work student is required to have a minimum of 500 clock hours of educationally directed field experience. This experience will give students the opportunity to integrate knowledge and develop skills in a variety of social work practice settings. Undergraduates should be prepared to spend at least one quarter in an off campus field learning experience. For further information contact the Office of the Director, Undergraduate Program, School of Social Work, Tucker Hall.

REQUIREMENTS FOR BACHELOR OF SOCIAL WORK DEGREE

	HOURS		
1. COMMUNICATION SKILLS	20		
ENG 101 — required*	5		
ENG 102 — required	5		
SPC (MAN) 467 — required	5		
Advised elective	5		
2. POLITICAL SCIENCE AND ECONOMICS	10		
POL 101 — required	5		
Advised elective	5		
3. MATHEMATICS AND RESEARCH DEVELOPMENT	20		
STA 200 — required	5		
SW 432 — required	5		
Advised electives	10		
4. BIOLOGICAL SCIENCES	10		
BIO 101-101L — required	5		
BIO 102-102L — required	5		
5. HISTORY	5		
HIS 251 or 252 — required unless the student passes the Georgia and U.S. history test. If the test is passed, any other history course can be taken for 5 hours.	5		
6. BASIC PHYSICAL EDUCATION	5		
7. CULTURAL STUDIES	15		
Course content under cultural studies will enable students to gain knowledge of different socio-cultural systems and their effects on human development and behavior. Only one introductory level course can be taken for credit in this area (e.g., SOC 260, ANT 102, SOC 105, SOC 206H, or ANT 212H). One course in Afro-American culture and one course in cultural diversity are required. All courses in this area must be taken with the approval of the student's advisor.			
8. HUMAN BEHAVIOR	25		
A. Individual development	5		
CFD(PSY) 395 — required			
B. Family—One of the following:	5		
CFD 393; CFD 407; CFD 495; CFD(SOC) 461; or CFD 210			
		C. Groups—One of the following:	5
		PSY(SOC) 373; SPC(MAN) 256; or SPC(MAN) 456	
		D. Advised electives	10
		9. MAJOR COURSES—REQUIRED	60
		SW 215 Field of Social Work	5
		SW 220 Social Welfare as a Social Institution	5
		SW 352 Interventive Methods of Social Work Practice	5
		SW 391A Seminar in Social Work Practice (with concurrent practicum)	10
		SW 440 Human Behavior and Social Environment	5
		SW 460 Social Work in Organizations and Communities	5
		SW 470 Social Welfare Policies and Services	5
		SW 391BCD Seminar in Social Work Practice (block field experience)	15
		SW 500 Senior Seminar	5
		10. ELECTIVES	25
		General Electives	15
		Electives in substantive areas selected in consultation with advisor	10
		TOTAL	195

Graduation Information

A student should apply for graduation at the Registrar's Office in the Academic Building within ten class days after reaching senior status (135 hours). The School of Social Work, in cooperation with the Registrar's Office, has deadlines for completing graduation checkout.

COURSES OF INSTRUCTION

SOCIAL WORK (SW)

215. Field of Social Work. 5 hours.
This course presents a comprehensive introduction to the field of social work. It also serves as a basis for looking at the functions

*ENG 101 is required with credit or may be exempted.

of social work practice as it relates to the delivery of social services to individuals, groups and communities.

220. Social Welfare as a Social Institution. 5 hours.

Prerequisite: SW 215.

An examination of the response of American society to people in need from the colonial period to the present. American social welfare programs will be studied within the contextual framework of economic, political and ideological influences.

352. Interventive Methods of Social Work Practice. 5 hours.

Prerequisite: SW 215, SW 220 and admission to the professional program.

The first course in the social work practice sequence. The purpose of the course is to provide the student with the beginning knowledge, skill and value base for generic social work practice.

391A. Seminar in Social Work Practice. 5-10 hours.

Prerequisite: Senior standing in undergraduate social work program.

Knowledge and skill in integrated social work practice with practicum.

391BCD. Seminar in Social Work Practice. 5 hours each.

Prerequisite: Senior standing in undergraduate social work program.

Knowledge and skill in integrated social work practice with practicum.

432. Research Methods in Social Work. 5 hours.

The focus is on research process, research methodology and evaluation of available research in social welfare and social work.

440. Human Behavior and Social Environment. 5 hours.

Prerequisite: SW 215 and SW 220.

This course provides the student with a conceptual framework for viewing human behavior within a social context consistent with the focus of social work practice, i.e., to enhance the social functioning of people as individuals, family members and members of society.

444. The Afro-American Family: Practice and Theory in Social Work. 5 hours.

Prerequisite: One family course, 200 level or above, from SOC or CFD.

This course is designed to enhance the student's awareness and knowledge of Afro-American families. It will focus on various problems and issues which confront Afro-American families both socially and politically – past, present and future.

460. Social Work in Organizations and Communities. 5 hours.

Prerequisite: SW 352.

This course will examine organizational and inter-organizational behavior, group dynamics and community structures within the context of social work practice in human service organizations and communities. The course will also integrate this content with techniques for bringing about change in organizations and communities.

470. Social Welfare Policy and Services. 5 hours.

This course examines in-depth social welfare structures, functions, policies, programs, and costs as an organized societal response to human needs. Emphasis is placed on the process involved in establishing, shaping, and changing social policy.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.

Prerequisite: SW 215 and SW 220.

Affords Honors students of junior or senior class standing the opportunity to engage in individual study, readings or projects under the direction of a qualified faculty member.

499H. Honors Thesis. 5 hours.

Prerequisite: SW 215 and SW 220.

Affords Honors students the opportunity to undertake individual research in the area of his/her major or a closely related field.

500. Senior Seminar. 5 hours.

This is the final social work course. It is designed to provide the student with a bridge from college to professional social work employment. It is a synthesizing and integrative seminar where the student becomes further aware through research about the role of the baccalaureate social worker.

575. Seminar in Public Welfare Practice. 5 hours.

Prerequisite: SW 215, SW 220 and 352.

This course is to be in seminar format which will explore a variety of problems and issues in public welfare, specifically drawn from experience and objectives of the students enrolled.

THE COLLEGE OF VETERINARY MEDICINE

ADMINISTRATIVE OFFICERS

David P. Anderson, B.S., D.V.M., M.S., Ph.D.,
Dean

John M. Bowen, D.V.M., Ph.D., *Associate Dean*
Charles N. Dobbins, Jr., B.S., D.V.M., *Associate Dean*

Michael D. Lorenz, B.S., D.V.M., *Associate Dean*

Harold E. Snyder, B.S., M.S., *Assistant to the Dean*

GENERAL INFORMATION

Purpose and Organization

Veterinary medicine is the health profession that applies the principles of the biomedical sciences to health and disease in animals, contributes to many areas of human need through research and, in its practice, has important direct and indirect implications for human health. Its basic concern is the protection and improvement of the health and economic welfare of our nation. Veterinary medicine is a unique combination of medical science, agricultural science, and biological science.

The University of Georgia College of Veterinary Medicine is designed to meet the educational needs of prospective veterinarians from the Southeast. At present, students are accepted from Georgia, South Carolina, and West Virginia through a Southern Regional Education Board agreement. The present first year class quotas permit Georgia to enroll 60 students each year. Quotas for South Carolina and West Virginia are subject to change by the Southern Regional Education Board each year. Interested persons should contact the Office of the Dean for current information. A maximum of 86 students is admitted to the four-year curriculum each fall. The College is officially recognized as a fully accredited in-

stitution by the Council on Education of the American Veterinary Medical Association.

The College of Veterinary Medicine also has postgraduate instructional responsibilities, which are described in the separate College of Veterinary Medicine Bulletin. Such additional training is necessary to prepare students for careers in teaching and research. In addition, a program of continuing education for veterinary practitioners is offered approximately once each month to keep the profession up-to-date on advances in the science and art of veterinary medicine.

Research programs intended to insure the health of the animal resources of Georgia and to protect the human population from those diseases transmittable from animals to man are conducted in the Veterinary Medical Experiment Station. Studies are conducted on diseases of farm animals, pets, wildlife, poultry, fish, marine life, horses, and laboratory animals. These research programs are an integral part of the training of graduate students.

The College faculty also functions in various service capacities through the facilities of the College's Teaching Hospital and the Veterinary Diagnostic Laboratories, located in Athens and at Tifton, Georgia.

Facilities

The College is composed of clinics, offices, laboratories, and classrooms designed to meet the needs of practicing clinicians and their students. Space for large animal surgery, classrooms, auto-tutorial instruction, library and student facilities recently has been added to the College. A wing housing 26 offices with adjacent laboratories, a complete electron microscopy suite, laboratory animal facilities, environmental control rooms, and laboratories for parasitology, physiology, pharmacology, toxicology, and surgery was occupied in 1972. A 7.1 million dollar teaching hospital, which

opened in the Fall of 1979, more than tripled the College's hospital capacity. Additional space for maintaining animals is available at the veterinary farm and the Poultry Disease Research Center.

Diagnostic Laboratories

Harvey S. Gosser, *Director, Tifton Lab*
Jack L. Blue, *Director, Athens Lab*

The College maintains diagnostic laboratory facilities in Tifton and Athens to assist the veterinarian in diagnosing animal diseases. Funded by the Georgia Department of Agriculture, the laboratories are designed to handle problems concerning large and small domestic animals, as well as laboratory and exotic animals. Laboratory services include pathology, microbiology, toxicology, and serology. Both facilities are staffed by veterinary medical diagnosticians and technicians. Though the labs exist primarily as a service to animal owners through their veterinarians, many diagnostic laboratory cases are utilized by faculty members for instructional purposes. Extension veterinarians meet with citizen groups and practitioners in these facilities to present pertinent information or recent developments to those concerned.

Veterinary Teaching Hospital

Robert E. Lewis, *Hospital Director*
Robert L. Gearhart, *Hospital Administrator*

The foremost objective of the Veterinary Teaching Hospital is to provide clinical experience for students. This method of instruction enables the prospective veterinarian to familiarize himself or herself with veterinary clinical cases under the supervision of practicing clinicians. The staff is composed of faculty members trained in various phases of veterinary medicine and surgery, including internal medicine, surgery, radiology, dermatology, ophthalmology, urology, neurology, gastroenterology, oncology, reproduction, equine lameness, food animal and equine medicine and surgery, and herd health management. In addition, the staff's services and hospital facilities are available to the private practitioner on a referral or consultation basis and for the continuing education of practitioners.

Degree Offered

The basic professional degree offered by the College is the *Doctor of Veterinary Medicine*. The College also administers graduate programs leading to masters and doctoral degrees. Specific information concerning programs at the undergraduate, professional, and graduate

levels may be found in the College of Veterinary Medicine Bulletin and the Graduate School Bulletin, copies of which may be obtained by writing:

Office of the Dean
College of Veterinary
Medicine
The University of
Georgia
Athens, Georgia 30602

Graduate School
Boyd Graduate Studies
Research Center
The University of
Georgia
Athens, Georgia 30602

Admission

Specific inquiries about admission policies may be addressed to the Associate Dean for Academic Affairs, College of Veterinary Medicine. The University of Georgia is an equal opportunity employer and does not discriminate on the basis of age, sex, or ethnic origin.

Applications from qualified persons of minority groups are actively encouraged.

Requirements for Admission

In order for the student entering veterinary medical college to be prepared for the courses, he or she must have acquired certain basic scientific information. Such information is ordinarily obtained in the following undergraduate courses:*

English
Physics**
Biology
Chemistry (inorganic and organic)**
Humanities and social studies

Although three years of college is the minimum requirement, the student should pursue a well-rounded B.S. degree program. The requirements for admission to the College of Veterinary Medicine are based on the premise that the program of training of a veterinarian is a continuous one shared by both the undergraduate college and the veterinary medical college. The responsibility of the undergraduate training program is thus not only to provide the prospective student with the technical information and skills necessary to complete the DVM program, but also to help develop a broad background of experience and interest which will make it possible later to achieve a full realization of potential as an individual and a member of society.

*Information on specific courses and credit hours required can be found in the College of Veterinary Medicine Bulletin or in the Admissions Requirements brochure published by the College of Veterinary Medicine.

**Must be at the pre-medical sciences level and not a survey course.

Pre-Veterinary Medical Program

The required courses for admission to the College of Veterinary Medicine can be completed at any accredited college or in conjunction with studies in any major in the College of Arts and Sciences or College of Agriculture. Either of these options is equally acceptable, and the decisions as to which major to declare should be determined by the student's alternate interest and ability.

Combined B.S.A.-D.V.M. Program

The combined B.S.A.-D.V.M. program is available at The University of Georgia. A three-year pre-veterinary student may qualify by completing the required courses of the selected major in the College of Agriculture and utilizing the first year professional veterinary courses in the College of Veterinary Medicine as electives on the B.S.A. degree program. All pre-veterinary students should have an alternative degree program in mind in the field of their choice to pursue if they do not gain admission to the College of Veterinary Medicine.

Application

Applicants must complete and return to the appropriate state official an application form, which must be received no later than November 1. This application must include two copies of transcripts from each institution of higher education attended by the applicant. To be eligible for consideration, the applicant must be able to complete at least 105 quarter hours, including all required courses, by the end of the academic year in which he or she intends to matriculate. No courses over eight years old will be considered.

Application is open to legal residents of Georgia, South Carolina, and West Virginia. Applicants must be legal residents at the time of matriculation in the College of Veterinary Medicine. State officials who may be contacted for application forms and interview dates are:

West Virginia Residents

Dr. P. Vernon Ambrester
Associate Dean
Department of Agriculture and Forestry
West Virginia University
Morgantown, West Virginia 36505

South Carolina Residents

Pre-Veterinary Advisor
Department of Animal Science
College of Agriculture and Biological Science
Clemson University
Clemson, South Carolina 29631

Georgia Residents

Associate Dean for Academic Affairs
College of Veterinary Medicine
The University of Georgia
Athens, Georgia 30602

Eligibility

In order to be considered for admission, applicants must have accumulated a 2.7 grade point average.

No person is eligible for admission who has been excluded or is on probation at any school or college for deficiency in scholarship or because of misconduct. All admissions to The University of Georgia College of Veterinary Medicine are conditioned on the applicant's continued satisfactory academic work between the date of his or her tentative acceptance and actual entry into the College. A student who gains entrance to the College by misrepresentation will be immediately dismissed.

Graduate Record Examination and Veterinary Aptitude Tests.

Each applicant will be required to take the Graduate Record Examination (GRE), including the Advanced Biology section, and the Veterinary Aptitude Test (VAT). Information about the GRE can be obtained from testing and evaluation centers or graduate school offices of most colleges or universities. Information about the VAT can be obtained from the Psychological Corporation, 304 East 45th Street, New York, New York 10017. These tests must be completed and the results available by the deadline date for receipt of applications. Scores will be accepted only from tests taken within three years *prior* to the deadline for receipt of applications.

Interviews

Personal interviews with the admissions committee of the College of Veterinary Medicine are granted to the most highly qualified applicants (approximately two to three times the number that can be accepted from each state). Applicants are expected to present themselves for interview at the appointed time. All interviews will be conducted in the Office of the Dean unless an applicant is otherwise notified.

Notification of Applicant Status

Notification of the action of the College on all applications will be mailed directly to the individuals on or about April 15 of each year. This action will be in the form of (1) tentative acceptance, or (2) not accepted.

Program of Study

Students at the College of Veterinary Medicine follow a four-year program of study. The first three years of the curriculum are designed to integrate a sound knowledge of the basic medical sciences with clinical application. The fourth year of the curriculum is devoted entirely to the application of basic medical sciences to veterinary medical principles and procedures in a clinical situation.

The fourth year is divided into 16 blocks of 15-16 instructional days. Of these 16 blocks, 12 are required and the remaining four blocks may be used for electives and free time. Students must schedule a minimum of 80 quarter credit hours during the four quarters of the fourth year. A total of 259 quarter credit hours is required for graduation.

Complete course listings and descriptions are available in the College of Veterinary Medicine Bulletin, copies of which may be obtained from the Office of the Dean. The Veterinary College Bulletin also provides information on grading standards, dismissal policies, and other regulations for veterinary medicine students.

Student Activities

Students are governed by a code of ethical conduct that is administered by the faculty and students. The official student governing body is the student chapter of the American Veterinary Medical Association. Students also are involved in publication of the *Intra-Vet* newsletter, the *Veterinarius* yearbook, and Alpha Psi and Omega Tau Sigma professional veterinary medical fraternities.

COURSES OF INSTRUCTION

(See separate College of Veterinary Medicine Bulletin for professional and graduate courses.)

VETERINARY ANATOMY AND RADIOLOGY (VAR)

309. Anatomy of the Domestic Farm Mammal. 5 hours.

Prerequisite: ZOO 326-326L or equivalent.

An introduction to the gross, microscopic, and developmental anatomy of common farm animals. Offered each Fall quarter. Not for students in veterinary medicine. Especially arranged for College of Agriculture students majoring in the animal sciences.

503. (BIO) Electron Microscopy Laboratory. 2 hours.

See BIO 503.

AVIAN MEDICINE (AM)

373. Poultry Health. 5 hours.

Prerequisite: PS 360 and MIB 350-350L.

A study of common infections, parasitic and nutritional diseases of poultry; their causes, diagnosis, prevention, and control. Offered to students majoring in poultry science and others who are qualified.

MEDICAL MICROBIOLOGY (MMB)

311. Veterinary Preventive Medicine. 5 hours.

Prerequisite: VPH 310 and MIB 350-350L.

A service course dealing with the common diseases of livestock, with emphasis on prevention and control through better management and sanitation. (Offered each Spring quarter.)

402-402L. Diseases of Cultured Fishes. 5 hours.

Three lectures and two lab periods.

Prerequisite: MMB 422-422L or MIB 422-422L or equivalent.

A detailed study of diseases associated with the culture of warm water, cold water, and marine fishes. Specific disease entities are covered according to etiology, epidemiology, pathogenesis, diagnosis, prevention, and con-

trol. Laboratory sessions will cover laboratory methods utilized in the study of fish diseases.

410-410L. Immunology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MIB 350-350L, BCH (BIO) 310 and permission of department.

Introduction to the mechanism of the immune response, host resistance to infection and serologic testing methods.

422-422L. Pathogenic Bacteriology. 5 hours. Three lectures and two double lab periods.

Not open to students with credit for MIB 422-422L.

Prerequisite: MIB 350-350L and one additional course in microbiology.

Studies on the morphological, cultural and physiological properties of the important pathogenic bacterial and mycotic agents; their relation to health and disease is emphasized.

439-439L. Diagnostic Microbiology. 5 hours. Two lectures and three double lab periods.

Prerequisite: MMB 410-410L or MIB 410-410L and MMB 422-422L or MIB 422-422L and permission of department.

A course presenting an application of basic microbiological techniques to the problems associated with the recovery of disease orga-

nisms from clinical materials. Emphasis will be placed upon methodology and the problems involved in laboratory isolation and identification.

450-450L. Virology. 5 hours.

Prerequisite: MIB 350-350L and BCH (BIO) 310.

An introduction to the viruses: classification, replication, methodology, pathogenesis and epidemiology of viral diseases, and viral neoplasia.

480. Environmental Epidemiology. 5 hours.

Prerequisite: Two courses in microbiology.

Application of the basic principles and concepts of epidemiology to the environmental considerations of infectious diseases and chronic illnesses of current public health significance with special emphasis on occupational health.

PHYSIOLOGY AND PHARMACOLOGY (VPH)

310. Elements of Physiology. 5 hours.

A presentation of the mammalian body as a single functional unit; studies include nervous, muscular, respiratory, circulatory, digestive, renal, endocrine, and reproductive systems.

THE GRADUATE SCHOOL

ADMINISTRATIVE OFFICERS

John C. Dowling, B.A., M.A., Ph.D., *Dean*
Harold W. Gentry, B.S., M.A., Ed.D., *Associate Dean*

H. Branch Howe, Jr., A.B., M.A., Ph.D., *Associate Dean*

Eugene L. Heric, B.S., M.S., Ph.D., *Assistant Dean and Coordinator of Instructional Institutes*

Mary Ann Keller, A.B.J., *Director of Graduate Admissions*

Kermit R. Jeffers, B.S., M.Ed., *Assistant to the Dean*

Marjorie Gordon, B.A., M.A., Ph.D., *Administrative Assistant to the Dean*

Gail B. Ertel, B.S., M.Ed., *Administrative Assistant to the Dean*

GENERAL INFORMATION

Purpose

The Graduate School has primary responsibility for the administration of advanced study in all schools and colleges of the University.

Organization

Matters of policy relating to graduate education are determined by the graduate faculty through the graduate council. The graduate faculty consists of faculty members appointed by the president on the basis of scholarly competence (including published research or appropriate creative activities), intellectual leadership, and experience with graduate education. The policies determined by the graduate council are administered by the dean of the Graduate School.

The general degrees Master of Arts and Master of Science are offered in 27 and 32 disciplines, respectively. The Doctor of Philosophy degree is offered in 49 disciplines.

Professional masters' degrees are offered in 20 areas. The Specialist in Education degree may be earned in 40 fields. Professional doc-

toral degrees are offered in education, music, and public administration.

Facilities

The Graduate School has access to the resources of the entire University. Of particular value are the University libraries, containing over 2,000,000 books, serials and documents, and many other items including manuscripts, photographs, drawings, and maps. The collections support the curricular and research needs of the campus and are available to library users both on the campus and across the state.

The research program at the Oak Ridge Associated Universities, Oak Ridge, Tennessee, makes available facilities for research problems and thesis writing. The University of Georgia Marine Institute at Sapelo Island has research programs in progress on marine and aquatic biology, biochemistry, and plant physiology. The Institute for Behavioral Research encourages studies in various disciplines concerned with changes in the people and culture of the South. The Institute of Higher Education serves as an institutional research facility for the University and assists persons preparing for college teaching or institute research positions. The Institute of Ecology coordinates and extends research and graduate training in various areas. Detailed information on research programs in various fields is given in the Graduate School Bulletin.

Assistantships and Scholarships

A variety of support for graduate students is available in the form of graduate assistantships, teaching assistantships, and research assistantships.

Application blanks and further information may be obtained from the dean of the Graduate School. Applications for financial assistance from University-wide funds must be filed in the appropriate department by February 15 of each year; departmental awards may be applied for at any time.

Admission

Graduates of institutions accredited by regional accrediting associations are eligible to apply for admission to the Graduate School. Applicants should have ranked in the upper half of their undergraduate class and for study in most disciplines should have completed the equivalent of an undergraduate major in the field in which they propose to study. Application forms may be obtained from the Graduate Admissions Office. Applicants for admission must submit, with the formal application, two copies of official transcripts from all colleges and universities attended, including The University of Georgia, two official copies of test scores on an approved entrance test, and three letters of recommendation. There is a \$10.00 nonrefundable admission application fee.

Applications and supporting credentials must be received in the Graduate Admissions Office no later than thirty days prior to the first day of classes of the quarter the student plans to enroll. Foreign applicants must apply at least eight weeks before the first day of classes of the quarter they plan to enroll.

Each completed application, with supporting materials, is referred to the department in which the applicant proposes to study, where it is considered by the faculty of that department. No student will be admitted without the recommendation of a department. Final approval is given by the dean of the Graduate School. Materials submitted in support of an application will not be returned.

Students may not register unless they have received an official acceptance letter admitting them to the Graduate School. Students participating in the Honors Program, and those registered in the School of Law, may enroll in graduate courses with the approval of their advisors and the dean of the Graduate School.

An applicant who does not register for regular campus courses in the quarter for which admission was granted should inform the Graduate Admissions Office of the change in plans, and request a new date of admission, if one is desired. Otherwise, the original admission will be cancelled, the applicant's file will be discontinued, and a new application will be required for admission at a later date.

Entrance Tests

The Aptitude Test of the Graduate Record Examinations is an acceptable entrance test for admission as a prospective degree candidate. Applicants for admission to masters' programs in education may offer scores on the National Teacher Examinations if the examination was

taken prior to the Fall quarter, 1982 administration or the Miller's Analogy Test in lieu of scores on the Graduate Record Examinations. The Graduate Management Admission Test is the preferred entrance examination for applicants seeking admission as prospective candidates for the Master of Business Administration or the Master of Accountancy degrees. Entrance test scores over six years old are not acceptable.

The Graduate Record Examinations and the Graduate Management Admission Test are offered several times a year at numerous testing centers in the United States and abroad. Advance registration is required. Registration forms and detailed information on the availability and character of each examination may be obtained from the Graduate School or by writing to the Educational Testing Service, Princeton, New Jersey 08541. The Miller's Analogy Test is given at various colleges and universities as approved by The Psychological Corporation. For information concerning the test as given at The University of Georgia, contact the Office of Testing and Evaluation, Clark Howell Hall. For information concerning the test as given at other centers, contact The Psychological Corporation, 304 East 45th Street, New York, New York 10017.

Additional Information

Correspondence concerning admission should be addressed to the Graduate Admissions Office, The University of Georgia, Athens, Georgia 30602. Inquiries about facilities for advanced studies and research, programs of study, and departmental requirements should be addressed to the department concerned. More detailed information is given in the Graduate School Bulletin, which may be obtained by writing the dean of the Graduate School.

Foreign Students

Since several months may be required to secure needed information, and to process an application from abroad, foreign nationals are urged to submit application materials as early as possible. The application must include the application form, two official transcripts from all colleges and universities attended, two official copies of test scores on an approved entrance test, a \$10.00 nonrefundable graduate application fee, and three letters of recommendation. Recommendations from teachers who are familiar with higher education programs in the United States are advantageous. Foreign applicants, for whom English

is not their native tongue, must submit TOEFL (Test of English as a Foreign Language) scores, in addition to scores on an appropriate entrance examination. The application, and all supporting materials of a student from abroad, must be received in the Graduate Admissions Office no later than eight weeks prior to the first day of classes of the quarter for which admission is desired.

Classification of Graduate Students

Only those applicants who are formally admitted to graduate standing will be eligible to register in the Graduate School.

Applicants may be admitted to the Graduate School in any one of the following classifications:

(1) *Prospective Candidate for a Degree.* An applicant who meets all the requirements for admission to a degree program and who has been recommended by the department in which he/she proposes to study may be admitted as a "prospective candidate" for that degree.

(2) *Non-degree.* An applicant who holds a master's or a doctor's degree from an accredited institution may apply for admission as a non-degree student by submitting an application supported only by a transcript of the master's or doctor's degree work. This classification permits a person to enroll for graduate courses without becoming a candidate for a degree. If a non-degree student is later admitted as a prospective candidate for a degree, work taken while in this classification may be included as part of a graduate degree program subject to departmental regulations, approval of the student's major professor, the departmental graduate coordinator, and the dean of the Graduate School. Courses taken in this classification may not be included in a program of study leading to a Specialist in Education degree. Note: Some departments may require additional information. Persons applying for admission in this status should contact the appropriate department.

(3) *Graduate Transient.* At the discretion of the department in which admission is sought, transient admission may be granted to a student in good standing in any recognized graduate school who wishes to enroll in the Graduate School for one quarter. The student must submit an application and certification of graduate standing in an accredited institution at least 30 days prior to the first day of classes of the quarter the student plans to enter Graduate School. A special form for this purpose is available from the Graduate Admissions Office. Later, if the student wishes to enroll as a prospective candidate for a degree, applica-

tion to the Graduate School must be made in the usual way. Note: Some departments may require additional information. Persons applying for admission in this status should contact the appropriate department.

(4) *Unclassified Postgraduate.* A graduate of a non-accredited college or foreign institution, or one on whom some condition has been placed by the major department, may be admitted provisionally to a degree program by the Graduate School as an unclassified postgraduate. An unclassified postgraduate may later change his/her degree objective on the basis of entrance test scores, his/her record at The University of Georgia, and the recommendation of the department. Work taken while in this classification may be included as part of a graduate degree program subject to departmental regulations, and approval of the student's major professor, the departmental graduate coordinator, and the dean of the Graduate School. Persons admitted provisionally will be expected to change their classification to that of prospective candidate for a degree during the second quarter of residence unless other conditions are specified on the letter of acceptance. Courses taken in this classification may not be included in a program of study leading to a Specialist in Education degree.

(5) *Post-baccalaureate.* A person who holds a baccalaureate degree and wishes to enroll in graduate in-service courses for self-improvement and/or certification purposes only may apply for admission as a post-baccalaureate student. Prospective post-baccalaureate students must submit an application for admission to the Graduate School and two copies of transcripts from all colleges and universities attended. The application and transcripts should be in the Graduate Admissions Office 30 days prior to the date of registration for the in-service course in which the student plans to enroll. No admission fee is required with a post-baccalaureate application.

Post-baccalaureate credit may be applied to a limited extent toward an advanced degree if approved by the student's major professor, the departmental graduate coordinator, and the dean of the Graduate School. Credit earned in this classification may not be applied to a program of study leading to a Specialist in Education degree.

Admission as a post-baccalaureate student does not usually permit registration for regular on-campus courses. If a student admitted in the post-baccalaureate classification subsequently wishes to enroll as a prospective candidate for a degree, he/she must so advise the

Director of Graduate Admissions, submit appropriate test scores and recommendations, and pay the \$10.00 application fee.

Irregular Students

Applicants who have been denied admission to the Graduate School, if they are to enroll in the University, may be registered through an undergraduate school or college and classified as irregular students. No irregular student will be permitted to register for graduate courses, and no work taken while in this classification may be applied to a graduate degree program.

Should the work of the irregular student prove to be of such quality as to justify admission to graduate status, reconsideration may be given to the application for admission at any time after the student has completed a minimum of 15 quarter hours of approved coursework in classes on the campus and has submitted satisfactory scores on an appropriate entrance test.

Combined Degree Programs

The Graduate School offers certain combined degrees with other schools and colleges in the University.

Certain students in the College of Arts and Sciences may be eligible for completion of combined A.B./M.A. or B.S./M.S. programs in a four-year period. Students interested in these degree objectives should contact the University Honors Program.

Students interested in the J.D./M.B.A. or J.D./M.Acc. four-year combined degree programs should contact the School of Law and the College of Business Administration.

Selected Pharmacy students may enter a combined degree program in which they receive the B.S. degree in Pharmacy at the end of their third professional year and the M.S. degree in Pharmacy at the end of one additional year.

Enrollment in Graduate Courses — Law/Undergraduate Students

Students enrolled in the School of Law, who hold a bachelor's degree from an accredited university/college and who are in good standing, may enroll in graduate courses with approval of their advisors and the dean of the Graduate School. An approval form may be obtained in the School of Law.

Undergraduate students, participating in the Honors Program and who are in good standing, may register for graduate courses with approval of their advisors and the dean

of the Graduate School. An approval form may be obtained in the Honors Program Office.

Undergraduate students, having received prior approval, may enroll for up to ten quarter hours of credit to be included in a graduate program of study if they are within five hours of completing requirements for the undergraduate degree. They may enroll for five hours of such credit if they are within ten hours of completing degree requirements. This credit must be in 400-500 numbered courses which also have 600-700 listings. If work in the 400-500 numbered courses is satisfactory, credit at the graduate level will be granted after admission and registration in the Graduate School of The University of Georgia. A form to request prior approval may be obtained in the Graduate School.

Course Numbers and Load

Courses numbered 800-900 are advanced graduate courses and seminars which provide educational experiences at the highest level in a graduate student's program of study. Those courses numbered 600-700 are "fundamental knowledge", "technique", and "professional" courses and are normally taken early in the graduate student's program of study. Joint undergraduate/graduate courses, numbered 400/600 and 500/700, in which undergraduate and graduate students are mixed, are not normally used to provide the core requirements of a graduate degree program. Such courses may be used as electives and as service courses taken in other departments.

A full course load for a graduate student is 12-17 hours per quarter. Students who hold assistantships that require from one-third to one-half time service must register for a minimum of ten quarter hours each quarter. Students enrolling for over 17 hours per quarter must receive approval from the Graduate School. Any graduate student using University facilities and/or staff time must register for at least five quarter hours each quarter. Students must be registered for a minimum of five quarter hours the quarter in which they complete all degree requirements.

Probation and Dismissal

Students may be dismissed by their department at the end of any quarter if they have not made sufficient academic progress to warrant continuance of study. Termination of students will follow policies and procedures adopted by the department. When students are terminated by a department, but not simultaneously by the Graduate School, they may apply

for admission to another graduate program if they wish to do so.

Students with a cumulative graduate course average below 3.0 for two consecutive quarters are placed on academic probation by the Graduate School. They then must make a 3.0 or higher quarterly graduate average each succeeding quarter that their overall cumulative graduate average is below 3.0. These students are no longer on probation when their cumulative graduate average is 3.0 or above. If they make below a 3.0 quarterly graduate average while on probation, they are dismissed. When students repeat a graduate course, the last grade will be utilized to calculate the cumulative graduate average that is used for probation and dismissal. Grades of "S," "U," "I," and "V" will not be used in calculating the cumulative graduate average. When students are dismissed under the terms of this policy, they may not apply for admission to another graduate program offered by the University. Students who are dismissed by the Graduate School for academic reasons may appeal the dismissal to the dean of the Graduate School. Information concerning the appeal process may be obtained in the Graduate School.

DEGREES OFFERED

The degrees offered by the Graduate School are listed below. For specific requirements see the Graduate School Bulletin.

Advanced General Degrees

Master of Arts

The Master of Arts degree will be conferred upon candidates who have met prescribed requirements, with major study in one of the following fields: anthropology, art history, business administration, classics, comparative literature, drama, economics, education, English, French, geography, German, Greek, history, journalism, Latin, linguistics, mathematics, mathematics (non-thesis), music, philosophy, political science, religion, Romance languages, sociology, Spanish, and speech communication.

Master of Science

The Master of Science degree will be conferred upon candidates who have met prescribed requirements, with major study in one of the following fields: agricultural economics; agricultural engineering; agronomy; anatomy (veterinary); animal science; biochemistry; botany; chemistry; child and family development; clothing, textiles, interiors and furnishings;

dairy science; entomology; foods and nutrition; food science; forest resources; geology; horticulture; housing, home management and consumer economics; medical microbiology; microbiology; molecular and population genetics; pharmacology (veterinary), pharmacy; physics; physiology (veterinary); plant pathology; poultry science; psychology; statistics; veterinary parasitology; veterinary pathology; and zoology.

Doctor of Philosophy

The University established this degree for the purpose of providing properly qualified students with the opportunity to pursue research and other scholarly activity beyond the point that is possible in programs for the master's degree. At present, opportunity for such advanced graduate work is provided in agricultural economics, agronomy, animal nutrition, animal and dairy science, anthropology, art, biochemistry, botany, business administration, chemistry, child and family development, comparative literature, counseling and student personnel services, drama, ecology, economics, education of exceptional children, educational psychology, English, entomology, food science, foods and nutrition, forest resources, geography, geology, history, horticulture, linguistics, mass communication, mathematics, medical microbiology, microbiology, molecular and population genetics, pharmacology (veterinary), pharmacy, philosophy, physical education, physics, physiology (veterinary), plant pathology, political science, poultry science, psychology, reading education, Romance languages, sociology, statistics, veterinary parasitology, veterinary pathology, and zoology.

This degree will not be granted upon the completion of any definite amount of work prescribed in advance. It will be granted in recognition of proficiency in research, breadth and soundness of scholarship, and thorough acquaintance with a specific field of knowledge. Evidence of such attainment must be provided through the presentation of an acceptable dissertation based upon independent research and passing of such written and oral examinations as may be prescribed.

Advanced Professional Degrees

Master of Accountancy

This degree program prepares students for professional careers in public accounting or for executive positions in private accounting. It is open to students who hold a Bachelor of Business Administration degree or its equivalent.

Master of Agricultural Extension

This degree is designed especially for county agricultural extension workers. In addition to the general Graduate School requirements, one year of field experience in agricultural extension, or its equivalent, is required.

Master of Applied Mathematical Science

The Master of Applied Mathematical Science is a terminal degree program designed for students who seek a broad training in applied quantitative methods as preparation for professional employment in business, government, or industry. For such students, this program will provide a structure that blends various applied mathematical sciences with particular reference to their application to real-world problems.

Master of Art Education

This program is designed to improve the professional competency of teachers and supervisors of art.

Master of Arts for Teachers

Programs leading to the Master of Arts for Teachers degree are designed to prepare teachers for employment in secondary schools and junior colleges. The degree may be earned in English, French, German, Romance languages, and Spanish.

Master of Avian Medicine

This degree is designed to provide veterinarians with specialized training in the diagnosis, treatment, and prevention of poultry diseases.

Master of Business Administration

This program is designed for the student who desires sound training beyond the bachelor's degree as preparation for a career in business.

Master of Education

This degree is designed for the student whose vocational objectives require preparation for teaching, supervision, and/or first line administration in public schools, junior colleges, and other educational and/or helping agencies. A student who contemplates becoming a candidate for this degree should seek the advice of the graduate coordinator of the department in which he/she plans to enroll. The Master of Education degree may be obtained in the following areas: adult education, agricultural education, audiology education, business education, cooperative vocational education, curriculum and instruction, distributive education, early childhood education, early childhood special education, educational administration, educational media, educational

philosophy, educational psychology, elementary education, emotionally disturbed children, English education, foreign language education, guidance and counseling, health education, health occupations education, home economics education, industrial arts education, interrelated program in exceptional children, learning disorders, library education, mathematics education, mental retardation, middle school education, multi-handicapped, music education, physical education, reading education, recreation and leisure studies, rehabilitation counseling, safety education, school psychometrist, school social services education, science education, social science education, speech education, speech pathology, student personnel in higher education, supervision, trade and industrial education, and vocational education.

Master of Fine Arts

This program is for students in the creative and performing arts whose professional objectives require advanced skills in art, drama, and music.

Master of Forest Resources

This is a professional program designed to be a terminal degree program for forest resources managers.

Master of Historic Preservation

This program is designed to prepare students for a wide range of careers in the conservation and management of historic resources in both the built and natural environments.

Master of Home Economics

This program prepares students for professional careers in home economics and related professions. This degree may be earned in the following areas: child and family development; clothing, textiles, interiors and furnishings; foods and nutrition; housing, home management and consumer economics.

Master of Landscape Architecture

This program provides advanced training for landscape architects and graduates in related fields.

Master of Laws

The L.L.M. program is essentially a fourth year of J.D. studies, affording an opportunity for further study in fields not fully covered in undergraduate law work.

Master of Marketing Research

This degree program is designed to develop marketing research professionals and thereby

satisfy the needs of business for research professionals. The program of study includes 55 quarter hours of graduate work including two quarters of internship and begins each Fall quarter. Students without prior business courses must complete foundation courses before entering the program.

Master of Music

This degree offers major concentrations in performance, woodwinds, composition, and music literature.

Master of Music Education

This program prepares students for professional careers in teaching or supervising school music or in music therapy.

Master of Plant Protection and Pest Management

This program is designed to produce graduates with comprehensive, multi-disciplinary training in plant pathology, entomology, and weed science for employment by industrial, extension, and regulatory agencies.

Master of Public Administration

Advanced professional training for graduates who plan to work in public administration is provided by this program.

Master of Social Work

This program emphasizes both clinical social work practice and community social policy.

Specialist in Education

This degree is planned for the student who seeks advanced specialized training in a selected area in order to improve teaching, supervisory, and/or administrative skills.

The program for the Specialist in Education degree shall consist of a *minimum* of 45 quarter hours of study at the graduate level beyond the master's degree. The Specialist in Education degree may be obtained in the following areas: administration in special education, adult education, agricultural education, art education, business education, counseling and student personnel services, curriculum and instruction, distributive education, early childhood education, educational administration, educational media, educational psychology, elementary education, emotionally disturbed children, English education, foreign language education, guidance and counseling, home economics education, industrial arts education, learning disorders, library education, mathematics education, mental retardation, middle school education, music education, physical education, reading education,

recreation and leisure studies, rehabilitation counseling, safety education, school psychology, school social services education, science education, social science education, speech education, speech pathology, student personnel in higher education, supervision, trade and industrial education, and vocational education.

Doctor of Education

This degree provides advanced professional training for careers in teaching, administration, and other educational services. At the present time, the degree is offered in the following fields of education: adult education, art education, business education, counseling and student personnel services, curriculum and instruction, early childhood education, education of exceptional children, education of gifted, educational administration, educational measurements, educational philosophy, educational psychology, elementary education, geographic education, higher education, language education, mathematics education, music education, physical education, reading education, recreation and leisure studies, research design, school psychology, science education, social science education, sociology education, speech education, supervision, teacher education, and vocational education. Specialization in research skills and in subject fields appropriate to the public schools, higher education, and other educational and/or helping agencies is provided.

Doctor of Musical Arts

The program of study leading to the Doctor of Musical Arts degree provides advanced professional, academic, and research preparation for music careers in teaching, performing, composing, and conducting. Major concentrations are offered in music education, performance, composition, and choral conducting/literature. The School of Music should be contacted regarding applied music options available within the performance and conducting areas.

Doctor of Public Administration

The objective of this program is to provide advanced doctoral level education of high quality for persons preparing to enter or who are already employed at the higher executive or managerial level of the public service of federal, state, and local governments in the United States.

Program for Teacher Certification

For Majors in Education

The Georgia State Board of Education is the agency which awards professional certificates. The College of Education has been approved to offer graduate programs designed to qualify students for fifth-year, sixth-year, and seventh-year professional certificates.

For other details and requirements see the Graduate School Bulletin.

For Majors in Fields Other Than Education

Candidates for degrees in fields other than education may meet the requirements for a teaching certificate at the fifth-year level. For requirements see the Graduate School Bulletin.

Certificate Programs

Gerontology

The University awards a Certificate in Gerontology to graduate students meeting certain requirements. For information concerning this program, contact Director, Gerontology Center, Candler Hall, The University of Georgia, Athens, Georgia 30602.

Global Policy Studies

The University awards a Certificate in Global Policy Studies to graduate students meeting certain requirements. Students may earn the Certificate either as a supplement to a regular degree program, or as a substitute for a degree program. For information, contact Director, Center for Global Policy Studies, Baldwin Hall, The University of Georgia, Athens, Georgia 30602.

DIVISION OF THE ARMED SERVICES

The Division of the Armed Services consists of the Department of Military Science and the Department of Aerospace Studies.

The Reserve Officer Training Corps programs are designed to develop leadership qualities and to give students an understanding of the Armed Forces and how they support the national policies and interests of the United States. In particular, ROTC programs are charged with the mission of commissioning second lieutenants who have the qualities, attributes and educational credentials essential for service as junior officers in the Army or Air Force.

Department of Aerospace Studies (AIR)

Air Force ROTC offers male and female students a course of study designed to complement their individual academic major. Cadets enrolled in the program represent a broad cross-section of the UGA student body. Enrollment in either the two-year or the four-year program offers each student an additional future career option. The student/cadet has an opportunity to explore and evaluate Air Force career opportunities while earning a college degree. Completion of the AFROTC curriculum is the initial step in the education of the professional officer and provides a firm understanding of aerospace concepts, the Air Force mission, organization and operation. A commission as an officer in the United States Air Force is tendered at the time the University grants the bachelor's degree. Newly commissioned officers may be granted a delay in entering active duty for the purpose of seeking advanced degrees.

General Program (GMC and POC)

The Air Force ROTC program consists of two phases: the general military course (GMC) and the professional officer course (POC); each phase requires six quarters of study on campus.

The GMC course materials deal primarily with the various Air Force organizations and their missions, as well as the history of the Air Force. GMC courses meet for two hours each week. Junior year materials emphasize student involvement in learning and practicing management and leadership techniques. The senior year course deals extensively with the political, economic and social factors relating to the formulation and implementation of national security policy. Communicative skills are stressed throughout the entire AFROTC curriculum. The junior and senior cadets meet for four hours each week. Completion of the GMC is normally required as a prerequisite to entering the POC. Transfer students and other students unable to participate in the on-campus GMC may substitute a six-week field training period for this requirement. Veterans can be awarded full credit for the freshman and sophomore courses and may enter the POC, based on their active military experience. Application for the six-week field training session must be accomplished by June 1 preceding the Fall quarter in which the student becomes a junior.

All students must complete one field training course, conducted at an active Air Force base during the summer months. There are two types of courses available, depending upon which program the student anticipates entering, two- or four-year. The two-year program requires a six-week field training course prior to entering the POC. The four-year program requires a four-week course to be completed normally between the sophomore and junior years.

Women Cadets

Air Force ROTC offers its full range of programs to women cadets. Women cadets are eligible to compete for AFROTC college scholarships, and they receive the same benefits as their male counterparts. Commission as an officer (second lieutenant) is tendered at the time the University grants the bachelor's degree.

Placement Credit

Students who have completed ROTC courses in essentially military preparatory schools or junior colleges may be given appropriate credit. Students who have taken high school ROTC should contact the professor of aerospace studies for placement. Individuals with prior service may also be given placement credit.

Selection for the Professional Officer Course (POC)

Selection for the POC is based on interest in the Air Force together with achievement records of academic ability, observed leadership traits, and the results of a mental officer qualification test and physical examination. Schedules for these tests are announced through normal student advisory media.

Pay

When attending either field training course, students are furnished transportation or payment for travel plus pay at the current rate of approximately \$375 per month. They are furnished all uniforms and receive free medical and dental care while at field training. A non-taxable allowance of \$100 per month during two academic years is paid to all POC cadets. This fee is in addition to any other scholarship benefits held by students.

Scholarships

The College Scholarship Program (CSP) is available to selected four and two year students participating in AFROTC programs. This scholarship consists of full payment of tuition fees, full reimbursement for all required books and the monthly allowance of \$100 mentioned above, for each scholarship year. Scholarship consideration is predicated on student ability, performance and potential.

Flight Training

Volunteers who are accepted for Air Force pilot training upon graduation will enter the Flight Instruction Program during their junior year of college. These students will receive aviation ground school and 13 hours of flying lessons at government expense. This program helps to prepare cadets for follow-on Air Force pilot training after graduation and provides an opportunity to qualify for an FAA Private Pilot license prior to graduation.

Student Obligations

When entering the professional officer course, a student must have at least two full academic years remaining to complete his/her college requirements for an undergraduate or a gradu-

ate degree or a combination of the two. Each POC student is required to enlist in the Air Force Reserve and to execute a written contract with the government. This contract requires a student to complete the POC and to accept a commission as a second lieutenant if tendered.

Air Force ROTC Uniforms

AFROTC uniform issuance procedures are to be revised. Consult the Department of Aerospace Studies.

Army ROTC Department of Military Science (MIL)

The course of study offered in military science is designed to prepare both the male and female students for service as commissioned officers in the United States Army. The Army ROTC provides students with knowledge and practical experience in leadership and management that will be useful in any facet of society. Each student is provided with a working knowledge of the organization and functioning of the Department of Defense and the role of the U.S. Army in the national security and world affairs.

Freshman and sophomore courses are basic military information and related skills. The course of study for juniors and seniors is advanced military science covering staff functions and leadership.

For selection and retention in the advanced course, a student must be physically qualified, maintain above average military and academic standing, and must demonstrate a potential for further leadership development.

Graduates of the advanced course are commissioned second lieutenants in the United States Army in the branch of service most appropriate to their interests and academic achievements, consistent with the needs of the Army. The branches of the Army include not only the vital combat arms, but such supporting technical fields as signal, ordnance, transportation, finance, legal, engineering, chemical and medical. Regardless of the branch selected, all officers will receive valuable experience in management, logistics, and administration. Advanced course graduates will be commissioned and either called to active duty after graduation to serve for a period of three to six months or three years depending on the prevailing military requirements and circumstances. Graduates may be granted a delay in reporting for active duty for graduate study. A small number of outstanding students are designated distinguished

military graduates and are offered commissions in the Regular Army each year.

Basic Military Science

Basic military science courses involve six quarters during the freshman and sophomore years. The student learns the organization and roles of the U.S. Army and acquires essential background knowledge of customs and traditions, weapons, map reading, tactics, communications, and first aid. Equally important, these courses have the objective of developing the student's leadership, self-discipline, integrity and sense of responsibility.

Placement

Veterans entering the military science programs will receive appropriate placement credit for their active military service. Students who have completed military science courses in military preparatory schools or junior colleges may be given appropriate credit. Students with at least three years of high school ROTC may also be granted placement credit. Placement credit or six quarters of basic military science, or the equivalent thereof, is a prerequisite to admission into the advanced program.

Advanced Military Science

The general objective of this course of instruction is to produce junior officers who by education, training, attitude and inherent qualities are suitable for continued development as officers in the Army. There are two avenues available for the student to be eligible for entry into the advanced program and obtain a commission as a second lieutenant:

- (a) satisfactory completion of, or placement credit for, the basic program at The University of Georgia or at any other school, college or university offering basic ROTC and meeting the entrance and retention requirements established by the Army.
- (b) be an active duty veteran or junior ROTC cadet graduate eligible for placement credit.

Alternate Programs for Admittance to Advanced Military Science

Students transferring to the University with two years of college remaining, but who have not completed basic military science, are eligible to be considered for selection into the advanced military science program. Those selected under the provisions of the two-year advanced program must satisfactorily complete a basic summer camp of six weeks duration prior to entering the advanced program

or must enroll in the condensed summer school phase of the basic course. This latter program consists of five, two-hour courses given during the Summer quarter. Students may take other courses during this session. Upon successful completion of the military science courses, they will be placed in the advanced course. Students attending the basic camp at Fort Knox, Kentucky, are paid at active army rates and given a travel allowance from their home to camp and return.

Advanced Summer Camp

Students contracting to pursue the advanced courses are required to attend advanced summer camp, normally between their junior and senior academic years at Fort Bragg, North Carolina. Students attending this camp are paid at active army rates and given a travel allowance from their home to camp and return.

Financial Assistance

All cadets are paid an allowance of \$100 per month during the last two years of ROTC. Further, cadets *not* on scholarship can through a new program (SMP) earn as much as \$16,500 over a four year period by being in both the Georgia National Guard and Army ROTC.

Scholarship Program

Each year the U.S. Army awards two and three-year scholarships to outstanding young men and women enrolled in the Army ROTC program who desire careers as regular Army officers. The Army pays tuition, fees, textbook and laboratory expenses incurred by the scholarship student and, in addition, each student receives \$100 per month for the academic year. Individuals desiring to compete for these scholarships should apply to the professor of military science at The University of Georgia. Four-year scholarships are available to high school seniors.

Army ROTC Uniforms, Books and Supplies

Students enrolling in the Army ROTC program will be issued U.S. Army uniforms, books and supplies by the Military Science Department. No fees or deposits of any kind will be required. Uniforms must be returned before commissioning or upon disenrollment from the ROTC program.

COURSES OF INSTRUCTION

DEPARTMENT OF AEROSPACE STUDIES (AIR)

Air Force ROTC Courses

The General Military Course is normally completed during the freshman and sophomore years. It consists of six quarters of study with one hour of classroom work and one hour of leadership laboratory per week.

The Professional Officer Course consists of six quarters of study and leads to a commission in the United States Air Force. Leadership and management skills as they apply to a junior officer in the Air Force are emphasized. Three classroom hours and one hour in leadership laboratory are required weekly. Students interested in this program leading to a commission should contact the Professor of Aerospace Studies.

General Military Course

101. The Air Force Today I. 2 hours.

This course deals with the Air Force in the contemporary world through a study of the total force structure, strategic offensive and defensive forces, general purpose forces, and aerospace support forces. Leadership laboratory activities are included.

102. The Air Force Today II. 2 hours.

Prerequisite: AIR 101 or permission of department.

A study of aerospace defensive forces including manned aircraft and missile defensive forces. Introduction to Army, Navy and Marine general purpose forces. Leadership laboratory activities are included.

103. The Air Force Today III. 2 hours.

Prerequisite: AIR 102 or permission of department.

A study of the tactical air forces and operations, counterinsurgency and special operations, and aerospace support forces. Leadership laboratory activities are included.

201. The Development of Air Power I. 2 hours.

Prerequisite: AIR 103 or permission of department.

The course includes the study of the development of air power from balloons and dirigibles

through the first World War. Leadership laboratory activities are included.

202. The Development of Air Power II. 2 hours.

Prerequisite: AIR 201 or permission of department.

This course continues the study of the development of air power from the first World War through the Second World War. Students gain an understanding of the use of air power and the technological changes occurring during this period. Leadership laboratory activities are included.

203. The Development of Air Power III. 2 hours.

Prerequisite: AIR 202 or permission of department.

This course continues with the study of air power following the Second World War. It deals with the peaceful employment of U.S. air power in relief missions and civic action programs in the late 1960's and the air war in Southeast Asia. Leadership laboratory activities are included.

Professional Officer Course (Advanced)

Enrollment in the Professional Officer Course requires completion of all AIR 100 and AIR 200 level courses or approved substitutes. Cadets must be mentally and physically qualified and have approval of the Professor of Aerospace Studies.

301. Air Force Management and Leadership I. 3 hours.

Prerequisite: Completion of all AIR 100 and 200 level courses or approved substitute.

An integrated management course emphasizing the individual as a manager in an Air Force milieu. The individual motivation and behavioral processes, leadership, communication and group dynamics are covered to provide a foundation for the development of the junior officer's professional skills as an Air Force officer. The basic managerial processes involving decision-making, utilization of analytic aids in planning, organizing, and controlling in a changing environment are emphasized as necessary professional concepts.

302. Air Force Management and Leadership II. 3 hours.

Prerequisite: AIR 301 or approval of the PAS. Organizational and personal values, management of forces in charge, organizational power, politics, managerial strategy and tactics, military justice and administrative law are discussed within the context of the military

organization. Actual Air Force cases are used to enhance the learning and communication processes.

303. Air Force Management and Leadership III. 3 hours.

Prerequisite: AIR 302 or approval of the PAS. Examination of the managerial and leadership problems found in industry and government. The military justice system is examined in detail. Actual Air Force cases developed for classroom use are used to enhance the learning and communication process.

401. National Security Forces in Contemporary American Society I. 3 hours.

Prerequisite: AIR 303 or approval of the PAS. A full year course conceptually focused on the Armed Forces as an integral element of society, with an emphasis on the broad range of American civil-military relations and the environmental context in which U.S. defense policy is formulated and implemented. Special emphasis for the quarter includes: societal attitudes toward the military and the role of the professional military leader-manager in a democratic society. Each student will prepare individual and group presentations for the class, write reports and participate in group discussions, seminars, and conferences.

402. National Security Forces in Contemporary American Society II. 3 hours.

Prerequisite: AIR 401 or approval of the PAS. A study of the fundamental values and socialization processes associated with the Armed Services; the requisites for maintaining adequate national security forces; political, economic and social constraints on the national defense structure; the impact of technological and international developments on strategic preparedness; and the manifold variables involved in the formulation and implementation of national security policy. Each student will prepare individual and group presentations for the class, write reports and participate in group discussions, seminars and conferences.

403. National Security Forces in Contemporary American Society III. 3 hours.

Prerequisite: AIR 401 and 402, or approval of the PAS.

A study of the role of the professional military officer in carrying out national policy. As a culmination of the year's work, each student will prepare an individual presentation on a relevant topic of importance to the class. A written report will be required as well.

DEPARTMENT OF MILITARY SCIENCE (MIL)

Army ROTC Courses

The basic course of six quarters duration consists of one hour of classroom work and one hour of leadership laboratory per week. The leadership laboratories are often conducted outdoors and may include field trips. In the classroom the student acquires knowledge of basic military skills, military organization, weapons, tactics, history and customs, foreign doctrines, and basic management techniques. In the field, leadership skills are progressively developed through experience and exposure to leadership situations.

The advanced course consists of three classroom hours and one leadership laboratory hour per week for two quarters during both the third and the fourth year. One quarter of either the third or fourth year consists of MIL 303, a two-hour course in preparation for Advanced Camp. During the Winter quarter prior to attendance at Advanced Camp the student must take PEB 151B, Weight Training for Fitness. One quarter during the fourth year, usually Spring quarter, must include HIS 457B, Recent Military History. One quarter of the senior year must include an elective approved by the Military Science Department. The coursework during the advanced course emphasizes techniques of management and leadership and the fundamentals and dynamics of the military team. The leadership laboratory provides the student with applied leadership experience.

Basic Course

101. Army Organization. 2 hours. One hour conference, one leadership lab.

A study of the U.S. Army and the ROTC organization.

102. Basic Weapon and Military Skills. 2 hours. One lecture, one lab period.

A study of characteristics of basic military weapons, the principles and fundamentals of rifle marksmanship, the elements of first aid, and the employment of individual camouflage, cover, concealment and field fortifications.

104. Basic Military Skills. 2 hours.

A study of the basic military skills essential to the contemporary soldier with emphasis on individual training in first aid, intelligence information and field preparedness.

105. Military Mountaineering. 2 hours.

This course provides both classroom and labo-

ratory instruction on ropes, knots, rope bridges, rappelling, and mountain survival techniques. The class will be divided into equal size teams for competition in the proper installation and crossing of rope bridges, the construction of improvised shelters, and installation of traps and snares.

201. Map and Aerial Photograph Reading. 2 hours. One lecture, one lab period.

Prerequisite: MIL 102 and 104, or approval of PMS.

A study of basic map reading as applied by the small unit leader.

202. Basic Tactics and Operations. 2 hours. One lecture, one lab period.

Prerequisite: MIL 102, 104 and 201, or approval of PMS.

A study of small unit tactics, operations and troop leading procedures to include the combined arms teams to the platoon with primary interest on the rifle squad.

204. Military Communications. 2 hours.

Prerequisite: MIL 101, 102, and 104.

A study of military communications equipment and procedures with emphasis on the FM radios and field telephone equipment available to the tactical commander at company and platoon level.

205. Soviet Military Doctrine. 2 hours.

An examination of the capabilities and methods of the military forces maintained or influenced by the U.S.S.R.

206. Leadership Assessment/Orientation. 2 hours.

Assessment and training in basic management

skills of planning, organizing, delegating, administrative control, problem analysis, influence, and leadership.

Advanced Course

301. Leadership and Management I. 3 hours.

Prerequisite: Basic Course or equivalent and permission of department.

A study of the psychology of leadership, techniques of management, and methods of instruction to include practical application.

302. Fundamentals and Dynamics of the Military Team I. 3 hours.

Prerequisite: Basic Course or equivalent and permission of department.

A study of tactics applied at the platoon and company level to include a study of the modern battlefield and current military tactical doctrine.

303. Leadership Seminar. 2 hours.

Prerequisite: MIL 301 and 302.

A series of seminars, laboratories and experiences to prepare the student for Advanced Summer Camp.

401. Fundamentals and Dynamics of the Military Team II. 3 hours.

Prerequisite: MIL 301 and 302.

A study of command and staff duties and responsibilities of the professional officer to include operations, intelligence, administration and logistics.

402. Leadership and Management II. 3 hours.

Prerequisite: MIL 301 and 302.

A study of special tactical operations, the military justice system and service orientation.



APPENDIX AND INDEX

APPENDIX

DEPARTMENTAL PREFIX ABBREVIATIONS

Accounting	ACC	Distributive Education	EDE
Adult Education	EAD	Drama	DRA
Agricultural Economics	AEC	Drama Education	EDR
Agricultural Education	EAG	Early Childhood Education	ECE
Agricultural Engineering	AEN	Economics	ECN
Agricultural Extension	AET	Education	EDU
Agricultural Mechanization		Educational Administration	EAS
Technology	AMT	Educational Media	EAV
Agriculture	AGR	Educational Philosophy	EPH
Agronomy	AGY	Educational Psychology and	
Air Force ROTC—Aerospace Studies	AIR	Measurement	EPY
Animal Nutrition	AN	Educational Research	ERS
Animal Science	AS	Elementary Education	EEL
Anthropology	ANT	Engineering Technology	ET
Aramaic/Syriac	ARA	English	ENG
Army ROTC—Military Science	MIL	English Education	EEN
Art	ART	Entomology	ENT
Art Education	EAR	Environmental Design	ENV
Arts and Literature	ARL	Environmental Health Science	EHS
Astronomy	AST	Exceptional Children Education	EXC
Avian Medicine	AM	Foods and Nutrition	FDN
Banking and Finance	FIN	Food Science	FS
Biochemistry	BCH	Foreign Language Education	EFL
Biology	BIO	Forest Resources	FRS
Botany	BOT	Foundations of Education	EFN
Business Education	EBE	French	FR
Business Law	BL	Geography	GGY
Catalan	CAT	Geology	GLY
Chemistry	CHM	German	GER
Child and Family Development	CFD	German Translation	GET
Classics	CLC	Gerontology	GNT
Clothing, Textiles, Interiors and		Global Policy Studies	GPS
Furnishings	CTI	Graduate Study Completion	GSC
Comparative Literature	CML	Greek	GRK
Computer Science	CSC	Health Education	HED
Counseling and Human		Health Occupations Education	EHO
Development Services	ECP	Hebrew	HBW
Curriculum and Supervision	ECS	Higher Education	EHI
Dairy Science	DS	Historic Preservation	HP
Dance Education	DED	History	HIS
Developmental Studies	DEV	Home Economics Education	EHE

Horticulture	HOR	Portuguese	POR
Housing, Home Management and Consumer Economics	HMC	Poultry Science	PS
Interdisciplinary Studies	IDS	Provençal	PRO
Industrial Arts Education	EIA	Psychology	PSY
Italian	ITA	Reading Education	ERD
Journalism and Mass Communication	JRL	Real Estate	RE
Jurisprudence	JUR	Recreation and Leisure Studies	REC
Landscape Architecture	LAR	Religion	REL
Language and Literature	LLT	Risk Management and Insurance	INS
Large Animal Medicine and Surgery	LMS	Romance Language	ROM
Latin	LAT	Russian	RUS
Library Education	ELE	Russian Translation	RUT
Linguistics	LIN	Safety Education	SED
Management	MAN	Sanskrit	SKT
Management Sciences	MS	Scandinavian	SCA
Marketing	MKT	Science	SCI
Mathematics	MAT	Science Education	ESC
Mathematics Education	EMT	Small Animal Medicine and Surgery	SMS
Medical Microbiology	MMB	Social Science	SOS
Microbiology	MIB	Social Science Education	ESS
Middle School Education	EMS	Social Work	SW
Molecular and Population Genetics	MPG	Social Work Education	ESW
Music	MUS	Sociology	SOC
Music Education	EMU	Spanish	SP
Netherlandic	NET	Speech Communication	SPC
Norwegian	NOR	Speech Education	ESP
Parasitology	PAR	Speech Pathology and Audiology	SPA
Pharmacy	PHR	Statistics	STA
Philosophy	PHY	Student Teaching	EST
Physical Education	PED	Swedish	SWE
Physical Education Basic	PEB	Trade and Industrial Education	ETI
Physics	PCS	Veterinary Anatomy and Radiology	VAR
Physiology and Pharmacology	VPH	Veterinary Medicine	VET
Plant Genetics	GEN	Veterinary Pathology	VPP
Plant Pathology	PAT	Vocational Education	EVO
Political Science	POL	Zoology	ZOO

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SOCIAL SECURITY NUMBER
(Required of all applicants)

OFFICE OF THE DIRECTOR OF ADMISSIONS
THE UNIVERSITY OF GEORGIA
ATHENS, GEORGIA 30602

DATE SUBMITTED

PLEASE PRINT ALL INFORMATION AND CHECK THE APPROPRIATE BOXES

DO NOT WRITE IN SHADED BOXES

APPLICANT INFORMATION

[illegible][illegible]

CITY STATE ZIP CODE COUNTRY OF ADDRESS (if not USA)

PERMANENT ADDRESS (of check if same as above) STREET AND NUMBER (area code) TELEPHONE

☐ CITY ☐ STATE ☐ ZIP CODE ☐ COUNTRY OF ADDRESS (if not USA)

PREVIOUS MAIDEN NAME (if applicable)

BIOGRAPHIC

DATE OF BIRTH
(month, day, year)

SEX

☐ MALE

☐ FEMALE

CITIZENSHIP STATUS
(Check appropriate box)

☐ U.S. CITIZEN BY BIRTH
☐ NATURALIZED U.S. CITIZEN
☐ ALIEN, NON-RESIDENT
☐ ALIEN, RESIDENT
(If Resident Alien, attach Form 1-151 permanent Visa Card)

ETHNIC ORIGIN
(Required of all Students)

☐ AM. INDIAN (I) ☐ HISPANIC (H)
☐ BLACK (B) ☐ WHITE (W)
☐ ASIAN OR PACIFIC ISLANDER (A)

RESIDENCY STATUS

LEGAL RESIDENT OF GEORGIA? ☐ YES
☐ NO
 IF YES, FOR HOW LONG? _____
 years months
 IF NO, WHAT STATE? _____

RELIGIOUS PREFERENCE: _____
(Optional. This information will be made available to the Campus Ministry Assoc.)

COUNTY OF PERMANENT ADDRESS (if Ga) _____

COUNTRY OF CITIZENSHIP (if not USA, _____)

RELATIONSHIP: PARENT ☐ GUARDIAN ☐ SPOUSE ☐ OTHER ☐

EMERGENCY CONTACT

NAME	LAST	FIRST	MIDDLE	JR., III, ETC.

[illegible]

CITY										STATE		ZIP CODE					COUNTRY OF ADDRESS (if not USA)					

CHECK RELATIVES WHO ATTENDED UGA: ☐ FATHER ☐ MOTHER ☐ BOTH ☐ BROTHER(S) OR SISTER(S) ☐ NONE

QUARTER YOU PLAN TO ENTER: ☐ FALL ☐ WINTER ☐ SPRING ☐ SUMMER 19____

APPLICATION TYPE

☐ FRESHMAN - no prior college attendance

☐ TRANSFER - specify credit hours expected
prior to UGA enrollment _____

☐ SECOND UNDERGRADUATE DEGREE

☐ FORMER UNIVERSITY OF GA. UNDERGRADUATE
last UGA school or college of enrollment _____

☐ IRREGULAR (see definition on reverse side)
☐ TRANSIENT (see definition on reverse side)
☐ CURRENT UGA UNDERGRADUATE
☐ CURRENT UGA GRADUATE STUDENT

MAJOR FIELD(S) OF STUDY _____ DEGREE OBJECTIVE _____

SCHOOL OR COLLEGE IN WHICH YOU PLAN TO REGISTER (check only one):

☐ AGRICULTURE	☐ BUSINESS	☐ ENVIRONMENTAL DESIGN	☐ HOME ECONOMICS	☐ PHARMACY	☐ LAW
☐ ARTS & SCIENCES	☐ EDUCATION	☐ FOREST RESOURCES	☐ JOURNALISM	☐ SOCIAL WORK	☐ VETERINARY MEDICINE

PLEASE REMEMBER TO ANSWER QUESTIONS ON THE REVERSE SIDE

ADMISSIONS DATA

ALL PREVIOUS EDUCATIONAL EXPERIENCE (include previous Univ of Ga attendance)

	COMPLETE NAME OF SCHOOL	LOCATION CITY, STATE	ATTENDANCE DATES		GRADUATION DATE	DEGREE OBTAINED
			FROM	TO		
	LAST HIGH SCHOOL					
	COLLEGE					
	COLLEGE					
	COLLEGE					
	LAST COLLEGE					

If transferring, how many credit hours do you expect to have at the time you enroll at UGA? _____ Quarter Hours ☐ Semester Hours (check one)

ADMISSIONS DATA

- Are you currently enrolled in the last institution attended, listed above? ☐ YES ☐ NO
- Do you plan to graduate from your current institution? ☐ YES ☐ NO If yes, when? _____
- If you are applying for summer school, do you intend to continue in the fall? ☐ YES ☐ NO
- Have you ever applied to this institution before? ☐ YES ☐ NO If so, for what quarter & year? _____ Last name then _____
- Have you ever attended this institution before? ☐ YES ☐ NO If so, what quarter & year? _____ Last name then _____
- Have you taken any UGA extension or correspondence work? ☐ YES ☐ NO If so when? _____ Where? _____
- What is your mother's full name _____; place of birth _____
her highest level of education attained _____ Deceased? ☐ Yes ☐ No her occupation _____
- What is your father's full name _____; place of birth _____
his highest level of education attained _____; Deceased? ☐ Yes ☐ No, his occupation _____
- Have you ever been convicted of anything other than a traffic violation? ☐ YES ☐ NO If yes, please explain on separate sheet
- If you are not entering college following your high school graduation, state how you have occupied your time _____

- State briefly why you want to attend The University of Georgia _____

- Applicant's Signature _____ Date _____
- Social Security Number _____

WHEN TO APPLY

Return completed application and fifteen dollar (non-refundable) processing fee to Director of Admissions, The University of Georgia, Athens, Georgia 30602, in accordance with the following schedule

Freshmen

- Qualified applicants may make application after the beginning of the senior year for entrance the following summer or fall quarter
- Submit application and the fifteen dollar (\$15.00) application processing fee to the high school principal or counselor. Ask the high school official to attach a transcript of all high school work completed and send the entire application to the Director of Admissions, The University of Georgia, Athens, Georgia 30602
- Applicants must submit scores for the College Entrance Examination Board Scholastic Aptitude Test for admission. Foreign Language (if two years of language have been taken in high school) Achievement Test scores of the College Entrance Examination Board should be submitted prior to enrollment. Optional tests which may be taken for credit are English, Chemistry, Biology, Physics and American or European History and Mathematics. Please request exemption advanced placement information if interested in further details
- A student should register in the school or college in which the major interest lies. Undecided students should enroll in the school which interests them most and avail themselves of the services of the Career Counseling Center. Pre-veterinary Medicine may be studied in the College of Agriculture or the College of Arts and Sciences. Pre-Law may be pursued in any school or college (See Academic Program)

Transfers

- Transfer juniors for summer or fall quarters may apply and send college transcripts at the end of the third quarter or second semester of college. Transfers for any other quarter should submit applications and transcripts at least one quarter prior to the quarter in which they wish to enroll
- Transient status enables a student to enroll for only one quarter. Transients for summer quarter may submit a letter of good standing from their home institution in lieu of transcripts. Transients for any other quarter must meet transfer admission requirements
- Irregular status most often applies to those students not pursuing a specific degree program, but wishing to enroll for other reasons such as teacher certification or fulfilling prerequisite courses for graduate study. Applicants holding baccalaureate degrees and desiring irregular status should furnish proof of college graduation

GENERAL INFORMATION FOR ALL APPLICANTS

- Application, processing fee (please send check or money order, NOT CASH), transcripts and other supporting documents (when applicable) must be submitted at least 20 days prior to the beginning of the quarter in which the applicant plans to enter; however, facilities for any Fall Quarter are usually filled well before this date
- Housing assignments are made only after student has been accepted
- Information on Summer Orientation and Registration for new students entering in Fall Quarter will be mailed in April
- Applicants for Graduate School should not use this form, but should ask the Graduate School to send a GRADUATE SCHOOL application. Applicants for the School of Law, the College of Veterinary Medicine and the School of Forest Resources should submit the application form furnished by those schools in addition to this general Application for Admission to the University
- Former University undergraduates who have not been enrolled for more than one calendar year should complete a Readmission Application. Students who have been enrolled within the past calendar year have no forms to process except the class schedule which can be processed at Phase II Registration the day before classes begin
- If father is in Armed Services and dependent applicant wishes to claim Georgia residency, notarization of Georgia as Home of Record must accompany application

UNDERGRADUATE APPLICATION PROCEDURES

The University of Georgia is a unit of The University System of Georgia. The University of Georgia is also an equal opportunity affirmative action institution and does not discriminate on the basis of handicap in admission or access to its programs.



Office of Undergraduate Admissions
114 Academic Building
The University of Georgia
Athens, Georgia 30602

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Graduate School

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